1. Savlon contains

a) Cetrimide + Chlorhexidine

b) Cetrimide + Chlorhexidine + butyl alcohol

c) Cetrimide + butyl alcohol

d) Cetrimide + Cetavlon

Correct Answer - A

Ans : A.Cetrimide + chlorhexidine *[Ref KDT pharmacology 6/e, p 861, 860; Park 20/e, p 117]*

Savlon contains - Chlorhexidine gluconate (hibitane) + Cetrimide (cetavlon) in various percentages Savlon liquid antiseptic - chlorhexidine gluconate 1.5% + cetrimide 3%

Savlon cream - chlorhexidine HC1 0.1% + cetrimide 0.5%

Savlon hospital concentrate - chlorhexidine gluconate 7.5% + cetrimide 15%

Other antiseptic and disinfectants of importance:

- Betadine - povidone (polyvinylpyrrolidone) iodine
- Dettol - chloroxylenol 4.8% in 9% terpinol & 13% alcohol
- Dakin's solution - Diluted sodium hypochlorite solution buffered with boric acid. Available chlorine is 0.5%.
- Eusol - Solution of chlorinated lime (1.25%) + boric acid (L25%) 0.4% available chlorine
- Dakin's solution & Eusol dissolve pus & necrotic tissue in addition to being germicidal. So used in cleaning of infected wound.

2. True about ASHA are all except

a) One per 1000 rural population

b) Mobiliser of antenatal care

c) Female voluntary worker

d) Skilled birth attendant

Correct Answer - D
skilled birth attendant */Ref: Park 20/e, p 380-381 (19k, p 365)1*
Ref. littp://molifw.nic.in/NRHM/stakeholders.htm
ASHA is the central component of the National Rural Health Mission (NRHM)
National Rural Health Mission (NRHM) was launched to address the health needs of rural population, especially the vulnerable sections of society
One of the key components of the National Rural Health Mission is to provide every village in the country with a trained female community health activist — `ASHA' or *Accredited Social Health Activist.* Selected from the villa itself and accountable to it, the ASHA will he trained to work as an interface between the community and the *public e health system.*
Following are the key components of ASHA:

- ASHA must primarily be a woman *resident of the village* — married/ widowed/ divorced, preferably in the age group *of 25 to 45 years.*
- She should be a literate woman with formal education up to class eight. This may be relaxed only if no suitable person with this qualification is available.
- ASHA will be the first port of call for any *health related demands* of deprived sections of the population, especially women and children, who find it difficult to access health services

- ASHA will be a health activist in the community who will *create awareness on health* and its social determinantsand mobilize the community towards local health planning and inc[a]reased utilization and accountability of the existing health services. She would be a *promoter of good health practices.*
- She will counsel women on birth preparedness, importance of safe delivery, breastfeeding and complementary feeding, *immunization, contraception* and prevention of common ¡nfections including Reproductive Tract Infection/Sexually Transmitted Infection (RT1s/STIs) and care of the young child

The gynaecomastia causing drugs can he categorized into :

- The first type are drugs *that act exactly like estrogens,* such as *diethylstilbestrol, birth control pills, digitalis,* and *estrogen containing cosmetics.*
- The second type is drugs that *enhance endogenous estrogen formation* such as *gonadotropins* and *clomiphene.*
- The third type is drugs that inhibit *testosterone synthesis and action such* as *spironolactone, ketoconazole, metronidazole* and *cimetidine.*
- The final type is drugs that act by *unknown mechanisms* such as *isoniazid,* methyldopa, captopril, tricyclic antidepressants, diazepam and heroin.

Also know,

- Testosterone also causes Gynaecomastia

3. To eradicate measles the percentage of population to be vaccinated is at least.....%

a) 70

b) 80

c) 85

d) 95

Correct Answer - D
95

4. Which of the following trace element has vitamin E like action:

a) Selenium

b) Cheomycin

c) Copper

d) Zinc

Correct Answer - A
Selenium

5. True about NPCDCS is all, EXCEPT:

a) Separate centre for stroke, DM

b) Implementation in some 5 states over 10 district

c) CHC has facilities for diagnosis and treatment of CVD, Diabetes

d) Day care facilities are available at subcentre

Correct Answer - C
The **NPCDCS program** has two components viz. (i) **Cancer** & (ii) **Diabetes, CVDs** & stroke.
These two components have been integrated at different levels as far as possible for optimal utilization of the resource.

The activities at State, District, CHC and Sub Centre level have been planned under the programme and will be closely monitored through NCD cell at different levels.

The strategies proposed will be implemented in 20,000 Sub Centres and 700 Community Health Centre in 100 Districts across 21 States during 2010-12

Early diagnosis of diabetes, CVDs, Stroke and Cancer is done at District Hospital, not at CHC.

Ref: NPCDCS Operational Guidelines, DGHS, GOI, Page 6; http:/health.bih.nic.in/Docs/Guidelines-NPCDCS.pdf.

6. Cluster testing technique is useful in which of the following conditions?

a) Sexually Transmitted Diseases

b) Poliomyelitis

c) Measles

d) Smallpox

Correct Answer - A
Explanation: Following methods are used for case detection of STD:
• **CONTACT TRACING:** Contact tracing is the term used for the technique by which the sexual partners of diagnosed patients are identified, located, investigated, and treated.
• **CLUSTER TESTING:** Here the patients are asked name other persons of either sex who move in the same socio-sexual environment. These persons are then screened.

Ref: Park's textbook of Preventive and Social Medicine, 21stedition, Page 313

7. Which of the following is false about intra-uterine devices (IUDs)?

a) Multiload Cu-375 is a third generation intra-uterine device (IUD)

b) Copper devices are effective as post-coital contraceptives

c) LNG-20 (Mirena) has an effective life of 5 years

d) Pregnancy rates of Lippes Loop and T Cu-200 are similar

Correct Answer - A
Multioad Cu-375 is a newer copper intra-uterine device (IUD).
The copper devices comprise the second generation IUDs.
The non-medicated or inert devices are the first generation IUDs and the hormone-releasing devices are the third generation IUDs
Ref: Park's Textbook Of Preventive And Social Medicine, By K. Park, 19th Edition, Pages 393-395.

8. Which of the following statements about 'Late Expanding Phase of Demographic Cycle' is TRUE?

a) Birth Rate is lower than Death Rate

b) High Death Rate and High Birth Rate

c) Death Rate declines more than Birth Rate

d) Death Rate begins to decline while Birth Rate remains unchanged

Correct Answer - C
In late expanding phase of demographic cycle death rates declines faster than the birth rate and there is a steady decrease in the demographic gap.
In this state population grow at a steadily decreasing rate.
Most of the developing countries are now at early expanding and late expanding stages of demographic cycle.

Ref: Park's Textbook of Preventive and Social Medicine By K. Park, 19th Edition, Page 379; Foundations of Community Medicine By Dhaar, 2nd Edition, Page 667

9. The number of Anganwadi workers supervised by a Mukhyasevika is:

a) 10

b) 15

c) 25

d) 30

Correct Answer - C
MukhyaSevika is a middle level supervisor. She supervises 20 to 25 Anganwadi workers. She is required to be a graduate in social work or home science or a related field. She is trained for three months.
Ref: Health policies and programmes in India, D.K. Taneja 11th edition page: 312

10. Minamata disease is caused by toxicity of:

a) Arsenic

b) Antimony

c) Lead

d) Mercury

Correct Answer - D
A significant example of mercury exposure affecting public health occurred in Minamata, Japan, between 1932 and 1968, where a factory producing acetic acid discharged waste liquid into Minamata Bay.
The discharge included high concentrations of methylmercury. The bay was rich in fish and shellfish, providing the main livelihood for local residents and fishermen from other areas.
For many years, no one realised that the fish were contaminated with mercury, and that it was causing a strange disease in the local community and in other districts.
At least 50 000 people were affected to some extent and more than 2 000 cases of Minamata disease were certified.
Minamata disease peaked in the 1950s, with severe cases suffering brain damage, paralysis, incoherent speech and delirium.

Ref : http://www.who.int/mediacentre/factsheets/fs361/en/index.html

11. **International Red Cross was founded by:**

a) Henry Dunant

b) John D Rockfeller

c) Marie Curie

d) None of the above

Correct Answer - A
The Red Cross is a non-political international humanitarian organisation founded by Swiss businessman Henry Dunant.
Ref: Park 21st edition page: 858.

12. **According to the congenital rubella syndrome eradication program, the first priority for rubella vaccination is offered to which of the following group?**

a) All female children at one year

b) All non pregnant women

c) All non pregnant women of age 15 to 34

d) All adolescent non pregnant girls 15 to 24 years of age

Correct Answer - C

The first and foremost priority has been given to the group of all non-pregnant women between the ages 15 and 34 for rubella vaccination. The other three options are suitable age groups.

Ref: Park's Textbook of Preventive and Social Medicine 19th edition; pages 130 - 131.

13. **Swajaldhara programme is associated with:**

a) Provision of safe drinking water

b) Provision of food supplements for destitute women

c) Provision of relief for victim of sexual abuse

d) Provision of health care for sick tribals

Correct Answer - A

Swajaldhara is a community lead participatory programme, which aims at provision of safe drinking water in rural areas with the full ownership of the community.

Swajaldhara has 2 components:

Swajaldhara I – for a Grama Panjayath or a group of Panjayath
Swajaldhara II – for a district as such

Ref: Park, Edition 21, Page - 419

14. **Which of the following screening methods is used under RNTCP?**

a) Active

b) Passive

c) Mass

d) All of the above

Correct Answer - B

Under RNTCP, active case finding is not pursued. *Case finding is passive*. Patients presenting themselves with symptoms suggesting tuberculosis are screened with two sputum smear examinations.

Ref: Park 21st edition, page 381.

15. **A temporary, provisional view held by the people on a point of view is:**

a) Opinion

b) Belief

c) Practice

d) Attitude

Correct Answer - A

Opinion *are views held by people on a point of dispute.*
They are based on evidence available at the time.
Opinions by definition are temporary, provisional.
They can be looked on as beliefs for the time being.

Ref: Park's Textbook of Preventive and Social Medicine, 19th edition, Page 542.

16. **Low glycemic index is classified as value less than:**

a) 25

b) 45

c) 55

d) 65

Correct Answer - C

Concept of glycemic index has utility in management of diabetes and obesity.

Classification	GI range	Example
Low GI	55 or less	Most fruits and vegetables except potatoes and water melon, pasta beans, lentils
Medium GI	56-69	Sucrose, brown rice, basmati rice
High GI	70 or more	Corn flakes, white bread, candy bar

Ref: Park 22nd edition, page 568

17. **As per RNTCP guidelines, Multi drug resistance (MDR) TB is defined as resistance to:**

a) Rifampicin

b) Rifampicin and isoniazide

c) Rifampicin, isoniazide and ethambutol

d) None of the above

Correct Answer - B
Confirmed MDR-TB case: MDR-TB suspect is one who is sputum culture positive and whose TB is due to Mycobacterium tuberculosis that are resistant in-vitro to at least **isoniazid and rifampicin** (the culture and DST result being from an RNTCP accredited laboratory).
Ref: Park 21st edition, page 178.
http://health.bih.nic.in/Docs/Guidelines-DOTS-Plus.pdf.

18. **What is the commonest form of plague?**

a) Bubonic plague

b) Pneumonic plague

c) Septicaemic plague

d) Hemorrhagic plague

Correct Answer - A

The commonest form of plague is bubonic plague.

Pneumonic plague occurs in less than 5% of patients.

Septicaemic plague occurs rarely except for accidental laboratory infections.

Ref: Park 21st edition, page 270.

19. **Dose of oseltamivir in a child aged 9 months is:**

a) 2mg/ kg twice daily for 5 days

b) 2.5 mg/ kg twice daily for 5 days

c) 3 mg/ kg twice daily for 5 days

d) 3.5 mg/ kg twice daily for 5 days

Correct Answer - C

Age groups	Recommended dose of oseltamivir
0 to 1 month	2mg/ kg twice daily for 5 days
>1 month to 3 months	2.5mg/ kg twice daily for 5 days
>3 months to 12 months	3mg/ kg twice daily for 5 days

Ref: Park 21st edition, page 148
Chapter: Epidemiology in communicable diseases.

20. Rotavirus vaccine doses should not be initiated beyond which age to prevent complications:

a) 6 weeks

b) 10 weeks

c) 12 weeks

d) 32 weeks

Correct Answer - C

Two live attenuated oral rotavirus vaccines have been licensed for use rotateq and rotarix.
The first dose of these vaccines should be given no later than 12 weeks.
In case of rotarix, vaccination must be completed by 24 weeks.
In case of rotate, last dose of vaccine should be administered by 32 weeks.
Risk of intussusceptions increase if first dose is administered beyond 12 weeks.
Ref: Park 21st edition, page 205.

21. **Dukoral is:**

a) Oral cholera vaccine

b) Oral rotavirus vaccine

c) Oral typhoid vaccine

d) Ready to use therapeutic food

Correct Answer - A

Dukoral is a monovalent cholera vaccine based on formalin and heat killed whole cells of vibrio cholerae 01 plus recombinant cholera toxin B subunit.

Ref: Park 21st edition, page 211.

22. **Skin fold thickness is measured in all of the following places, EXCEPT:**

a) Mid triceps

b) Biceps

c) Supra pubic

d) Supra iliac

Correct Answer - C

Harpenden callipers are used to measure skin fold thickness.

Skin fold thickness is measured in mid triceps, biceps, supra iliac and sub scapular areas.

The sum of these measurements should be less than 40 mm in boys and 50 mm in girls.

Ref: Park 21st edition, page 369.

23. Quality of life is defined as?

a) Standard of living

b) Level of living

c) Subjective feeling of well being

d) All of the above

Correct Answer - C
Ans. is 'c' i.e., Subjective feeling of well being
Ouality of life
* The level of living and standard of living are objective criteria of well being, *while quality of life comprises the individual's own subjective evaluation of these.*
* Recent definition of quality of life is as follows *"a composite measure of physical mental and social well being as perceived by each individual or group of individuals."*
* WHO definition is as follows *"the condition of life resulting from the combination of the effects of the complete range of factors such as those determining health, happiness, education, etc."*

24. Web Causation of disease is most appropriate ?

a) Mostly applicable for common disease

b) Better for all the related factors associated with causation of disease

c) Epidemiological ratio

d) Helps to interrupt the risk of transmission

Correct Answer - B
Ans. is 'b' i.e., Better for all the related factors associated with causation of disease

Web of causation

o This model is ideally suited *in the study of chronic disease,* where the disease agent is often not known but is the outcome of interaction of multiple factors.
o The "web of causation" *considers all the predisposing factors of any type and their complex relationship with each other.*
o The causal web provides a model which shows a variety of possible interventions that could be taken which might reduce the occurrence of disease (e.g. MI)
o The web of causation does not imply that the disease cannot be controlled unless all the multiple causes or chains of causation or at least a number of them are appropriately controlled. This is not the case. Sometimes removal or elimination of just only one link or chain may be sufficient to control disease, provided that link is sufficiently important in the pathogenic process.
o Therefore, in a multifactorial event, individual factors are by no means all of the equal weight.

25. BEINGS Model of disease causation does not include

a) Spiritual factors

b) Social factors

c) Religious factors

d) Nutritional factors

Correct Answer - C
Ans. is 'c' i.e., Religious factors
One way of remembering the categories of cause for the disease is an acronym used in the model (BEINGS model):
B: Biological factors and behavioral factors.
E: Environmental factors.
I: Immunological factors.
N: *Nutritional factors.*
G: Genetic factors.
S: Services, *social, spiritual factors.*

26. Definition of disease control is?

a) Agent is eliminated from community

b) Agent persists in community without causing health problem

c) Agent persists in community and causing pulic health problems

d) Any of the above

Correct Answer - B
Ans. is 'b' i.e., Agent persists in community without causing health problem
* In disease control, *the disease agent is permitted to persist in the community at a level where it cease to be a public health problem according to the tolerance of local population.*
* A state of equilibrium becomes established between the disease agent, host and environment components of the disease process.

27. Iodized salt in iodine deficiency control programme is?

a) Primary prevention

b) Secondary prevention

c) Teriary prevention

d) None

Correct Answer - A
Ans. is 'a' i.e., Primary prevention
Fortification of food e.g. iodized salt is primary prevention.
Primary prevention has two main components:-
i) Health promotion
ii) Specific protection
Mode of the intervention of Primary prevention Health promotion
Specific protection

.. *Health education* 1. *Immunization*
2. Environmental modifications 2. *Use of specific nutrients iron and folic acid tablet*
3. *Nutritional intervention* 3. *Chemoprophylaxis*
4. *Life style and behavioral changes* 4. Protection against occupational Hazards
5. Protection against accident
6. Protection from carcinogens
7. *Avoidance of allergens*
8. Control of specific Hazards in general environment e.g. air pollution, noise control
9. *Control of consumer product quality and safety of food and drug*
0. Using a mosquito net
.. Contraception

28. A patient prescribed crutches for residual paralysis in poliomyelitis is a type of -

a) Primary prevention

b) Primordial prevention

c) Disability limitation

d) Rehabilitation

Correct Answer - D
Ans. is 'd' i.e., Rehabilitation

- Provision of aids for crippled is rehabilitation, e.g. prescription of crutches for PRPP.
- It is a type of tertiary prevention.

29. A person has lost his leg in an accident because of which he is not able to walk. This is -

a) Disease

b) Disability

c) Impairment

d) Handicap

Correct Answer - B
Ans. is 'b' i.e., Disability
* This question is slightly different from previous one.
* Patient in this question is not able to walk (due to lost leg). This is called disability.
* Remember that the patient in this question also has impairment, i.e. loss of leg. (But the examiner is asking about inability to walk, in this question).

30. International disease surveillance is for ?

a) Hepatitis

b) Polio

c) TB

d) Leprosy

Correct Answer - B
Ans. is 'b' i.e., Polio

31. HIV prevalence can be assessed by-

a) Sentinel surveillance

b) Active

c) Passive

d) Register

Correct Answer - A
Ans. is 'a' i.e., Sentinel surveillance
o Sentinel surveillance in India is done in *national AIDS control programme.*

32. Principle for chinese medicine -

a) Yang

b) Vin

c) Both

d) None

Correct Answer - C
Ans. is 'c' i.e., Both
* Chinese medicine is based on two principles:-
i) *Yang :* Active masculine principle
ii) *Vin :* Negative feminine principle
* The balance of these two opposing forces meant good health.
* The Chinese were early pioneers of immunization. They practised *variolation to prevent smallpox.*
* The Chinese system of 'bare-foot doctors' and accupuncture have attracted worldwide attention in recent years.

33. Father of public health -

a) Cholera

b) Plague

c) Leptospirosis

d) Anthrox

Correct Answer - A
Ans. is 'a' i.e., Cholera
History of cholera
o Father of public health is a disease, not a person.
o *Father of public health is cholera.*
o John Snow (1813-1858) found the link between cholera and contaminated drinking water in 1854, using spot map.
o Robert Koch indified V. cholerae (1885).
Cholera morbus - Used in 19th & early 20th centuries for both non-epidemic cholera and other gastrointestinal diseases that resembled cholera.

34. The lawyer who designed the Public Health Act 1848 was ?

a) John snow

b) Edwin Chadwick

c) Joseph Lister

d) William Fan

Correct Answer - B
Ans. is 'b' i.e., Edwin Chadwick
* The great cholera epidemic of 1832 led *Edwin Chadwick (1800-1890),* a lawyer in England, to investigate the health of the inhabitants of large towns with a view to improve the conditions under which they live.
* Chadwick's report on *"The Sanitary Conditions of the Labouring Population in Great Britain",* a landmark in the history of public health, set London and other cities on the way to improve housing and working conditions.
* Filth was recognized as man's greatest enemy and with this began an anti-filth crusade, the *"great sanitary awakening",* which led to the enactment of 'Public Health Act 1948' in England.

35. One of the following is not true of International Classification of Disease -

a) It is revised once in 10 years

b) It was devised by UNICEF

c) The 10^{th} revision consists of 21 major chapters

d) It is accepted for National and International use

Correct Answer - B
Ans. is 'b' i.e., It was devised by UNICEF
ICD was devised by WHO.

36. Most important component of level of living is

a) Health

b) Education

c) Occupation

d) Housing

Correct Answer - A
Ans. is 'a' i.e., Health
Health is the most important component because its impairment always means impairment of level of living.

37. Simplest measure of mortality ?

a) Crude death rate

b) Case fatality rate

c) Proportional mortality rate

d) Specific death rate

Correct Answer - A
Ans. is 'a' i.e., Crude death rate
o The simplest measure of mortality is the crude death rate.

38. Limitation of case fatality rate-

a) Not useful in acute infectious disease

b) Not related to virulence

c) Time period not specified

d) It is not related to survival rate

Correct Answer - C
Ans. is 'c' i.e., Time period not specified
o Limitations of case fatality rate is that time period is not specified.
o CFR is typically used in acute infectious disease and is related to virulence of organism.
o Case fatality rate is the complement of survival rate.

39. All are true about incidence, except-

a) Numerator includes new cases

b) Denominator includes population at risk

c) Does not include unit of time

d) It is a rate

Correct Answer - C
Ans. is 'c' i.e., Does not include unit of time
o *Incidence rate must include the unit of time used in the final expression.* If you write 16.7 per 1000, this would be inadequate.The correct expression is 16.7 per 100 per year.
o All other options are correct.

40. Which one of the following is not a special incidence rate-

a) Attack rate

b) Secondary attack rate

c) Hospital admission rate

d) Standardized mortality rate

Correct Answer - D
Ans. is 'd' i.e., Standardized mortality rate
Special incidence rates
i) Attack rate (case rate)
ii) Secondary attack rate
iii) Hospital admission rate

41. For calculation of incidence denominator is taken as?

a) Mid year population

b) Population at risk

c) Total number of cases

d) Total number of deaths

Correct Answer - B
Ans. is 'b' i.e., Population at risk

- Denominator for calculating incidence is population at risk

42. All of the following are characteristics of case control study except -

a) Quick results are obtained

b) Measures incidence rate

c) Proceeds from effect to cause

d) Inexpensive study

Correct Answer - B
Ans. is 'b' i.e., Measures incidence rate
o Incidence rate can not be measured by case-control study as denominator (population at risk is not available).

43. Attributable risk means

a) Fatality of a disease

b) Disease risk ratio between exposed and non-exposed

c) Risk difference between exposed and non-exposed

d) Communicability of a disease

Correct Answer - C
Ans. is 'c' i.e., Risk difference between exposed and non-exposed
-Attributable risk (AR) is the difference in incidence rates of disease or death between an exposed and non-exposed group.
- It is expressed in percentage and gives the extent to which the disease can be attributed to the exposure in a cohort study.

44. Advantage of case-control over a cohort study ?

a) Attributable risk can be calculated

b) Odd's ratio can be calculated

c) For rare disease

d) b and c

Correct Answer - D
Ans. is 'b' i.e., Odd's ratio can be calculated & c i.e., For rare disease
o A cohort study is more reliable than a case-control study for an association between a suspected risk factor and subsequent disease because relative risk can be estimated by cohort study, while case-control study measures only an estimate of relative risk (odds ratio).
Why the Case-Control Study is suitable for a rare disease but not Cohort Study?
o In the cohort study, we proceed from effect to cause and if the study is for the rare disease we may get very few cases or no case at the end of the study. For example, if a rare disease has an incidence rate. 01 per 1000 (1 per 100000) population and we take a sample of 100 people to expose the risk factor, there will be very few cases at the end of the study as the disease is very rare and has a low incidence of 1 per 100000 population. (you can expect, How low will be the incidence in a sample of 100 people).
o On the other hand, in the case-control study, we can choose controls for the few available cases and the history of possible/suspected exposure *(s)* can be explored.

45. Berkesonian bias is a type of ?

a) Selection bias

b) Interviever bias

c) Information bias

d) Recell bias

Correct Answer - A
Ans. is 'a' i.e., Selection bias
Berksonian bias is a type of selection bias.
Bias
o It is any systemic error in the analysis of study that results in a mistaken estimate of an exposure's effect on the risk of disease.
o Mainly biases are of following types.
1. Selection bias
Surveillance/detection bias Referrel bias or volunteer bias Berksonian bias
Neyman survival bias Response bias
2. Information (Misclassification) bias
Reporting bias Interviewer bias
Recall bias Hawthorne bias (attention bias)
3. Confounding bias
Confounding is some times is referred to as a third major class of bias.

46. Problem of bias is maximum with -

a) Cohort study

b) Case study

c) Case control study

d) Experimental study

Correct Answer - C
Ans. is 'c' i.e., Case control study

47. Randomization is done to reduce ?

a) Recall bias

b) Selection bias

c) Berksonian bias

d) Reporting bias

Correct Answer - B
Ans. is 'b' i.e., Selection bias

48. Suspected cause preceding the observed effect is an example for -

a) Temporal association

b) Consistency of association

c) Strength of association

d) Coherence of association

Correct Answer - A
Ans. is 'a' i.e., Temporal association
Temporal association
o It implies *cause preceds effect* or *effect follows cause, i.e.,* suspected cause preceding the observed effect.
o *It is the most important criteria for causal association*
o It is best established by concurrent cohort study.
Strength of association
o It implies how strongly exposure is associated with disease.
o It is determined by
i) Relative risk (In Cohort study) I Have been explained
ii) Odds ratio (In case-control study)
iii) Dose-response relationship With increasing level of exposure to the risk factor, on increasing ris in incidence is found.
iv) Cessation of exposure (Reversibility) —> Removal of possible cause reduces risk of disease.
Consistency of association
o The association is consistent if the results are replicated when studies in different settings and by different methods.
o For example, different studies in different settings have proved smoking as one of the cause for lung cancer —> Smoking has consistent association with lung cancer.

Coherence of association

o The causal association must be coherent (supported by) with relevant facts.

o For example : -

The death rates due to lung cancer increasing more rapidly in females comparison to males.

The relevant fact ---> This increasing rate is due to more recent adoption of cigarrete smoking by women.

49. The difference between contamination and infection is that in infection-

a) Infectious agent is on body surface or on nonhuman objects

b) Infectious agent is in the body of human

c) Arthropods on the body surface

d) None

Correct Answer - B
Ans. is 'b' i.e., Infectious agent is in the body of human
o *Infection* --> Infectious agent in the body.
o *Contamination* ---> Infectious agent on body surface or on objects.
o *Infestation* --> Arthropods on body surface.

50. Following are examples of human "dead end" disease except -

a) Bubonic plague

b) Japanies ecephalitis

c) Hydatid disease

d) Leishmaniasis

Correct Answer - D
Ans. is 'd' i.e., Leishmaniasis
Dead and host
o A dead end host is an infected person from which infectious agents are not transmitted to other susceptible host or from which a parasite cannot escape to continue its life cycle.
o The diseases in which human acts as dead end host, i.e., dead and disease : ?
.. Japanies encephalitis 3.
Trichinosis 5. Bubonic plaque
?. Echynococcosis (hydatid disease) 4. Tetanus

51. Secondary attack rate is a measure of-

a) Communicability

b) Lethality

c) Strength of association

d) None

Correct Answer - A
Ans. is 'a' i.e., Communicability

- SAR is an important measure of communicability.
- Higher secondary attack rate means, more numbers of susceptible contacts are developing the disease after exposure to primary case.
- So, higher the SAR higher is the communicability (infectiousness) of disease.

One term related to secondary attack rate is attack rate and requires specific mention here (Has been explained in brief previously)
Attack Rate:
When new cases occur rapidly over a short period of time in a well defined population the attack rate is used. o It is usually *expressed as a percentage*.

$$\text{Attack Rate} = \frac{\text{new cases occuring during a short period of time}}{\text{population at risk at the beginning of the time perion}} \times 100$$

The attack rate is also called cumulative incidence rate. It differs from the conventional incidence rate in that it tends to describe disease or events that affect a larger proportion of the population of interest

interest.

Attack rate is used when *"population is exposed to riskfor a limited period of time, Such as epidemic."* Attack rate effects the extent of epidemic.

Attack rate vs secondary attack rate

Attack rate includes new cases during a specific period of time (which is usually short) and it includes all the cases during that period, i.e. primary as well as secondary cases.

On the other hand secondary attack rate includes new cases which develop within the range of incubation period after exposure to primary case, i.e. it includes only secondary case (not primary cases).

52. Transovarian transmission is seen in-

a) Rickettesial diseases

b) Malaria

c) Filaria

d) None

Correct Answer - A
Ans. is 'a' i.e., Rickettesial diseases
o Transovarial transmission is seen in Rickettesial disease (scrub typhus, Rickettsial pox, RMSF, ITT, Q fever).

53. Active and passive immunity should be given together in all except -

a) Tetanus

b) Rabies

c) Measles

d) Hepatitis B

Correct Answer - C
Ans. is `c' i.e., Measles
First see the difference between active and passive immunity.
Active immunity
o Active immunity develops because of *active participation* of immuniological system of the host.
o That means, after antigenic stimulation, the host develops antibodies or cellular immune response against that antigen due to activation of self B and/or cells.
o Antigenic stimulation may be : ?
i) Clinical infection
ii) Subclinical infection
iii) Vaccination (live attenuated vaccine or killed vaccine or toxoid).
Passive immunity
o The host's immune system does not take active participation but depends on ready-made antibodies or T cells to be transferred to it.
o Examples :
i) Administeration of immunoglobulin or antiserum
ii) Transplancental transfer of antibodies from mother to fetus.
iii) Administration of lymphocytes.
Coming back to question
o In some diseases passive immunization is often undertaken in

conjunction with inactivated vaccine products, to provide both : ?
i) Immediate (but temporary) passive immunity.
ii) Slowly developing long lasting active immunity.
o The disease in which simultaneous active and passive immunization are used : *?*
i) Tetanus iii) *Diphtheria*
ii) Rabies iv) *Hepatitis B*
o In measles also, both active and passive immunization are used, but not simultaneously. Because the antibody response to live attenuated measles vaccine is diminished in persons who receive immunoglobulin can currently. o So, the person passively immunized should be given live measles vaccine 8-12 weeks later.
So, both active and passive immunity are used : ?
i) Simultaneously —> Tetanus, rabies, Diphtheria, Hepatitis B.
At different time —> Measles.

54. Post-exposure prophylaxis is indicated in ?

a) HBV

b) Rabies

c) Diphtheria

d) All

Correct Answer - D
Ans. is 'a' i.e., HBV; 'b' i.e., Rabies; 'c' i.e., Diphtheria
Read the question carefully, examinar is asking about postexposure prophylaxis (not post-exposure immunization). o In previous explanation, I have explained the diseases for which post-exposure prophylaxis is done by immunization
(vaccine or immunoglobulin or both).
In some diseases post-exposure prophylaxis is done by drugs, i.e., *post-exposure chemoprophylaxis : -*

- HIV → Antiretroviral therapy
- Herpes → Famciclovir
- Diphtheria
- Miningococcal meningitis

55. Congenital acquired immunity is NOT found in -

a) Pertussis

b) Mumps

c) Rubella

d) Measles

Correct Answer - A
Ans. is 'a' i.e., Pertussis
Congenital passive immunity (maternal passive immunity)
o Maternal passive immunity is a type of naturally acquired passive immunity.
o It refers to antibody-mediated immunity conveyed to a fetus by its mother during pregnancy. o Important infection, against which immunity is transferred from mother to child ?
1) Chicken pox 3) Rubella 5) Diphtheria
2) Measles 4) Mumps 6) Polio
o Important diseases for which there is no maternal passive immunity ?
1) Pertussis (whooping cough) 3) Hepatitis B
2) TB

56. Name of mumps vaccine is -

a) Jeryl Lynn

b) Edmonshon zagreb

c) Schwatz

d) Moraten

Correct Answer - A
Ans. is 'a' i.e., Jeryl lynn
o Mumps vaccine strain is Jeryll Lynn strain.
o Other three strains are of measles vaccine.

57. All vaccines are given in disaster,except ?

a) Cholera

b) Influenza

c) Measles

d) Tetanus

Correct Answer - A
Ans. is 'a' i.e., Cholera
Vaccines recommended in disasters
o Following vaccines are recommended
1) Children < 10 years :- DPT, inactivated polio (IPV), *H.influenzae type b (Hib),* hepatitis B, pneumococcal conjugate vaccine (PCV), *measles-mumps-rubella (MMR),* varicella vaccine, *influenza,* hepatitis A and rotavirus.
2) Children and adolescents (11-18 years):- Tetanus, diphtheria, pertussis, meningococcal conjugate vaccine (MCV), Influenza.
3) Adults (>18 years):- Tetanus, diphtheria, pertussis, pneumococcal polysaccharide vaccine (PPSV23), and influenza.
o Vaccination against typhoid and cholera is not recommended.

58. 6th month immunization given is -

a) Measles

b) DPT

c) BCG

d) All

Correct Answer - A
Ans. is 'a' i.e., Measles
o Measles vaccine is given at 6 month.

59. Mass vaccination is ineffective in -

a) Measles

b) Polio

c) Tetanus

d) None

Correct Answer - D
Ans. is 'None'
o Mass vaccination is used in all the three given options.

60. The amount of bleaching powder necessary to disinfect choleric stools, is -

a) 50 gm/lit

b) 75 gm/lit

c) 90 gm/lit

d) 100 gm/lit

Correct Answer - A
Ans. is 'a' i.e., 50gm/lit

61. Time between infection and maximum infectivity is known as?

a) Incubation period

b) Serial interval

c) Generation time

d) Communicable period

Correct Answer - C
Ans. is 'c' i.e., Generation time
Generation time
o *Interval between receipt of infection by host and maximal infectivity of the host.*
o Generation time is roughly equal to the incubation period.
Ref: PARK 22nd edition pg96

62. Recall bias is most commonly associated with which study design -

a) Case control study

b) Cohort study

c) Cohort case control study

d) Cross-sectional study

Correct Answer - A
Ans. is 'a' i.e., Case control Study
Recall bias (Memory bias) :
This type of bias may occur when cases and controls are asked to recall certain events, and subjects in one group are more likely to remember the event than those in the other group.
For example people take aspirin commonly and for many reasons, but patients diagnosed as having peptic ulcer disease may recall the ingestion of aspirin in greater accuracy than those without G1 problems. Also patients who have had an MI are more likely to recall and remember certain habits (like eating habit) with greater accuracy than those who have not had an MI.

63. Chronic carrier state is not seen in all except ?

a) Poliomyelitis

b) Measles

c) Malaria

d) Tetanus

Correct Answer - C
Ans. is 'c' i.e., Malaria

64. Screening for condition recommended when ?

a) Low case fatality rate

b) Diagnostic tools not available

c) No effective treatment available

d) Early diagnosis can change disease course because of effective treatment

Correct Answer - D
Ans. is 'd' i.e., Early diagnosis can change disease course because of effective treatment
Criteria for screening
o The criteria for screening are based on two consideration.
i) Disease *to be screened*
ii) *Screening test to be applied*
o Disease to be screened
The disease to be screened should fulfil the following criteria before it is considered suitable for screening.
1. The condition sougth should be an important health problem (in general, prevalence should be high).
2. There should be a recognizable latent or early asymptomatic stage.
3. The natural history of the contition, including development from latent to declared disease, should be adequately understood (so that we can know at what stage the process ceases to be reversible).
4. There is a test that can detect the disease prior to the onset of signs and symptoms.
5. facilities should be available for confirmation of the diagnosis.
6. There is an effective treatment.
7. There should be an agreed-on policy concerning whom to treat as

patients (e.g., lower ranges of blood pressure; border-line diabetes).
3. There is good evidence that early detection and treatment reduces morbidity and mortality.
4. The expected benefits (e.g., the number of lives saved) of early detection exceed the risks and costs.

65. If prevalence of a disease increases, what is true?

a) PPV increases

b) PPV decreases

c) No effect on PPV

d) PPV may increase or decrease

Correct Answer - A
Ans. is 'a' i.e., PPV increase

66. High sensitive -

a) Low false positive

b) Low false negative

c) Low true negative

d) Low true positive

Correct Answer - B
Ans. is 'b' i.e., Low False negative
True positive is directly related to sensitivity o False negative is inversely related to sensitivity
True negative is directly related to specificity o False positive is inversely related to specificity
o *If a test has high sensitivity* —> more true positive, less false negative, and also more false positive. o *If a test has high specificity* —> more true negative, less false positive and also more false negative.

67. Screening procedure is best for Ca of -

a) Prostate

b) *Colon*

c) Gastric

d) None

Correct Answer - B
Ans. is 'b' i.e., Colon
o Two most important cancers, which can be prevented by screening are *carcinoma of colon and cervix.*

68. Most reliable test for screening of diabetes mellitus?

a) Random sugar

b) Fasting sugar

c) Glucose tolerance test

d) Urine sugar

Correct Answer - B
Ans. is 'b' i.e., Fasting sugar
"The best screening test for diabetes, the fasting plasma glucose (FPG), is also a component of gnostic testing" diabetesjournals.org
o The fasting plasma glucose test and the 75g oral glucose tolerance test (GTT) are both suitable tests for screening of diabetes.
o However, the FPG test is preferred in clinical settings because it is easier and faster to perform, more convenient and acceptable to patients, and less expensive.
"Fasting plasma glucose level is the most reliable and convenient test" Problem oriented patient management

69. Multiphasic screening means-

a) Application of the two or more screening tests in combination at one time

b) Application of two or more screening tests in combination at different time

c) Application of two or more screening tests in combination at different geographical areas

d) Application of separate screening tests for different diseases

Correct Answer - A
Ans. is 'A' i.e., Application of the two or more screening tests in combination at one time
Multiphasic screening
It has defined the application of two or more screening tests in combination with a large number of people at one time than to carry out separate screening tests for a single disease.
It increases the cost of health services without any observable benefit.Example-Annual Health Checkups
High-risk or selective screening is done on high-risk groups example- MRI screening of breast done annually in 25-year old women with BRCA 1, BRCA 2 mutations in first-degree relative

70. The frequently occurring value in a data is -

a) Median

b) Mode

c) Standard deviation

d) Mean

Correct Answer - B
Ans. is 'b' i.e., Mode

71. Most common deviation used in social medicine is-

a) Mean

b) Range

c) Variance

d) Standard deviation

Correct Answer - D
Ans. is 'd' i.e., Standard deviation
"Standard deviation is most common and generally most appropriate measure of dispersion (variation)".

72. Shape of normal distribution curve?

a) J shape

b) U shape

c) Bell shape

d) None

Correct Answer - C
Ans. is 'c' i.e., Bell shape
o Standard normal curve (Gaussian distribution) is *bell shape curve.*

73. One standard deviation in normal standard curve includes value-

a) 50%

b) 68%

c) 95%

d) 100%

Correct Answer - B
Ans. is 'b' i.e., 68%
o 1 SD includes ----> 68% of values
o 2 SD includes ----> 95% of values
o 3 SD includes ----> 99.7% of values

74. Height to weight is a/an -

a) Association

b) Correlation

c) Proportion

d) Index

Correct Answer - A
Ans. is 'a' i.e., Association
First read about these two related terms *:?*
o Association ---> Association may be defined as the concurrence of two variables more often than would be expected by chance. That mean 2 variables exist simultaneously.
o *Correlation* —> Correlation indicates the *degree (strength) of association between two variables,* i.e. relationship between two quantitative variables.
o Height to weight is an association and the strength of this association is indicated by correlation.

75. If correlation between weight and heights are very strong what will be the correlation coefficient *?*

a) +1

b) > 1

c) 0

d) None

Correct Answer - A
Ans. is 'a' i.e., +1
o A correlation simply expresses the strength and direction of the relationship between two variables in terms of a correlation coefficient, signified by `r'.
o Values of r varies from -1 to +1.;
o The strength of the relationship is indicated by the size of the coefficient , whereas its direction is indicated by the sign(+ or -)
o *A plus sign (+) means : That there is a positive correlation between the two variables - high values of one variable (such as salt intake) are associated with high value of the other variable (such as blood pressure) i.e salt intake is directly proportional to blood pressure.*
o A negative sign (-) means : That there is a negative correlation between the two variables - high values of one variables (such as cigarette consumption) are associated with low values of the other (such as life expectancy). Cigarette consumption is inversely proportional to life expectancy
o If there is a perfect linear relationship between the two variables so that it is possible to know the exact value of one variable from the knowledge of other variable, the correlation coefficient (r) will be exactly + or - 1.00 (+1 or -1).

exactly +1 or −1 (−1 or +1).

o If there is absolutely no relationship between the two variables so that it is impossible to know anything about one variable on the basis of knowledge of the other variable. Then the coefficient will be 0.

Strength of correlation

o The strength of linear relationship between two random variables X and Y is based on the value of correlation coefficient and is often summarized according to the following guidelines:-

For Positive Correlation	*For negative correlation*	*Interpretation*
r<0. 30	- 0.30 r	very weak linear relationship
0.30 5 r < 0.50	- 0.50 < r 5 - 0.30	weak linear relationship
0.50 _. r < or 0.80	- 0.80 <r - 0.50	moderate linear relationship
0.80 5..r< 0.90	- 0.90 <r- 0.80	strong linear relationship
r 0.90	1.5.-0.90	very strong linear relationship

o If you have difficulty in interpreting above table, I am giving in very simple language:–

A. Positive Correlation

i) Correlation coefficient *less than 0.30 Very weak positive correlation.*

ii) Correlation coefficient *0.30 to 0.49 --) Weak* Positive correlation

iii) Correlation coefficient *0.50 to 0.79 Moderate* Positive correlation

iv) Correlation coefficient *0.80 to 0.89 —)Strong* Positive correlation

v) Correlation Coefficient *equal to or greater than* 0.90—> very strong positive correlation.

B. Negative Correlation

i) Correlation coefficient *more than - 0.30 Very weak negative correlation*

ii) Correlation coefficient - 0.30 to - 0.49$_7$-> Weak negative

correlation
iii) Correlation coefficient - *0.50 to - 0.79* —> Moderate negative correlation
iv) Correlation coefficient - *0.80 to - 0.89* Strong negative correlation.
v) Correlation coefficient *equal or less then - 0.90* —> very strong negative correlation
Note: you should keep in mind that for negative values, more means towards more positive side and less means towards more negative side. For example; if we are saying, more than - 0.30, that mean - 0.29, - 0.28, - 0.27 .... so on; and if we are saying less than - 0.90 that means - 0.91, - 0.92 .... so on.

76. Correlation in height & weight are measured by?

a) Coefficient of variation

b) Range of variation

c) Correlation coefficient

d) None

Correct Answer - C
Ans. is 'c' i.e., Correlation Coefficient

77. Trends can be represented by -

a) Line diagram

b) Bar diagram

c) Scatter diagram

d) None

Correct Answer - A
Ans. is 'a' i.e., Line diagram
Line diagram (Line chart/Line graph)
o It is used to show the trend of events with passage of time and shows how the frequency of a particular event or variable vary over time.

78. People are separated into groups, from each group people are selected randomly. What type of sampling is this -

a) Simple random

b) Stratified random

c) Systemic random

d) Cluster

Correct Answer - B
Ans. is 'b' i.e., Stratified random
o Separation of people in groups followed by random sampling from those groups is stratified random sampling.

79. Analysis done for expenditure of large proportion for small number and vice versa ?

a) ABC analysis

b) SUS analysis

c) HML analysis

d) VED analysis

Correct Answer - A
Ans. is 'a' i.e., ABC analysis

80. Sample registration system is done once in *?*

a) 6 months

b) 1 year

c) 2 years

d) 5 years

Correct Answer - A
Ans. is 'a' i.e., 6 Months

81. In a Left skewed curve, true statement is?

a) Mean = Median

b) Mean < Mode

c) Mean>Mode

d) Mean = Mode

Correct Answer - B
Ans. is 'b' i.e., Mean < Mode

82. Chi-square test is for?

a) Standard error of Mean

b) Standard error of Proportion

c) Standard error of difference between 2 Means

d) Standard error of difference between Proportions

Correct Answer - D
Ans. is 'd' i.e., Standard error of difference between Proportions

- *Chi-square test measures the significance of difference between two proportions by testing, whether the observed frequencies differ significantly from the expected frequencies.*

83. All are non-parametric tests except -

a) Chi-square test

b) Sign test

c) Fisher exact test

d) Student t-test

Correct Answer - D
Ans. is 'd' i.e., Student t-test

84. Incubation period of influenza -

a) 18 - 72 hrs

b) 1 - 6 hrs

c) 5 - 10 days

d) < 1 hrs

Correct Answer - A
Ans. is 'a' i.e., 18 - 72 hrs

85. Rash of chickenpox can be differentiated from the rash of small pox by all except ?

a) Pleomorphic

b) Centripetal

c) Deep-seated

d) Unilocular

Correct Answer - C
Ans. is 'c' i.e., Deep-seated
Rash of chickenpox is superficial (not deep seated).

86. Chicken pox vaccine is -

a) Live vaccine

b) Killed vaccine

c) Conjugated vaccine

d) None

Correct Answer - A
Ans. is 'a' i.e., Live vaccine
Prevention of chickenpox
o For prevention of chickenpox following are used?
i) **Varicella zoster immunoglobulin (VZIG)**
VZIG is given within 72 hours of exposure in exposed susceptible individuals.
It is given intramuscular with a repeat dose in 3 weeks.
Because VZIG bind to varicella vaccine, the two should not be given concomitantly.
ii) **Vaccine**
Varicella vaccine is *live attenuated vaccine* and is recommended for children between 12-18 months of age.
Efficacy of vaccine is 90 - 95% and duration of immunity is probably 10 years.
Two doses are recommended in person older than 12 years of age.

87. Reconstituted measles vaccine should be used with in -

a) 1 hour

b) 3 hour

c) 6 hour

d) 12 hour

Correct Answer - A
Ans. is 'a' i.e., 1 hour
"The reconstituted vaccine should be kept on ice and used within one hour ". —Park Measles vaccine :

- *Type:* Live attenuated, lyophilized (Freeze dried) vaccine,
- Measles vaccine is live attenuated, lypholized (Freez dried) vaccine.
- Strains of virus used to prepare vaccine are Edmonston Zagreb strain (most common), Schwartz strain and Moraten strain.
- It is given subcutaneously in to middle one-third of antero-lateral aspect of thigh.
- It is given at the age of 9 months *(age can be lowerered to 6 months* in epidemics & malnutrition) and is repeated at 16-24 months of age.
- It has protective efficacy (sero-conversion) of 95%. Vaccination provide *life long immunity.*
- *Incubation period of vaccine induced measles is 7 days.*
- In post-exposure prophylaxis, measles vaccine should be given within 2-3 days of exposure. Incubation period of measles virus is 10 days. Incubation period of live attenuated measles virus of live vaccine is 7 days. Thus, if the vaccine is given within 2-3 days of exposure, the replication of vaccine virus takes preference over replication of wild virus.

- *Diluent* used for measles vaccine reconstitution is *distilled water or sterile water.*
- Reconstituted vaccine should be used within 1 hour.
- Usual temperature for cold chain storage is *+2 to +8°C.*

88. India started 2-dose vaccination strategy for measles, in -

a) 2008

b) 2009

c) 2010

d) 2011

Correct Answer - C
Ans. is 'c' i.e., 2010
o In the year 2010, the world's two most populous countries made promising advances in measles control :- i) China held the largest ever SIA, vaccinating more than 103 million children.
India started implementation of 2-dose vaccination startegy.

89. Measles vaccination is given at -

a) 9 months

b) At birth

c) 4 weeks

d) 8 weeks

Correct Answer - A
Ans. is 'a' i.e., 9 months
o The WHO expanded programme on immunization recommends immunization at 9 months of age.
o Now, second dose of measles is also given at 16-24 months in National Immunization Schedule.

90. In measeles vaccine can be given within-

a) 3 months

b) 5 months

c) 7 months

d) 6 months

Correct Answer - D
Ans. is 'd' i.e., 6th months
o The best age for measles vaccination is 9 months.
o The *age can be lowered to 6 months* if there is measles outbreak in the community. For infants immunized between 6 months and 9 months of age, a second dose should be administered as soon as possible after the child reaches the age of 9 months provided that at least 4 weeks have elapsed since the last dose.

91. Incubation period of swine flu -

a) 1-3 days

b) 2-3 weeks

c) 10-15 days

d) 5 weeks

Correct Answer - A
Ans. is 'a' i.e., 1-3 days
Swine flu
o Swine flu, also called swine influenza, or pig influenza, is caused by influenza virus.
o It is mainly occurs in swines (pigs) and occasionally transmitted to human.
o It is usually caused by influenza virus type A (H1-N1).
o *Incubation period is about 1-3 days* and the symptoms of swine flu in humans are similar to most influenza infections, e.g. fever, cough, rhinorrhea, fatigue and headache.

92. Ideal temperature for DPT storage ?

a) Room temperature

b) 4 to 8°C

c) 0 to - 20°C

d) None

Correct Answer - B
Ans. is 'b' i.e., 4 to 8°C
o Storage --> DPT / DT vaccine should not be frozen, they should be stored in a refrigerator between 4 to 8°C.
o *Optimum age* EPI has recommended that DPT vaccine can safely and effectively administered as early as 6 weeks after birth.
o *Number of doses* Three doses are considered to be optimal for primary immunization.
o *Interval between doses* —> The current recommendation is to allow an interval of 4 weeks between 3 doses, with a booster injection at 11/2 to 2 years, followed by another booster (DT only) at the age of 5-6 years.

Dose	Age
DPT_1	6 weeks of age
DPT_2	10 weeks of age
DPT_3	14 weeks of age
$DPT_{300,}$	16-24 months of age
DT Booster	*5* years of age

o *Mode and site of administration* ---> IM at upper & outer quadrant of gluteal region.
Also know
o Since the severity of pertussis infection decreases with age the

pertussis component in DPT vaccine is not usually recommended after the age of 6 years.
o Therefore, children over the age of 5 years who have not received DPT, need only 2 doses of DT vaccine 4 weeks apart, with a booster dose 6 months to 1 year later. Those children who received the primary course of DPT earlier, should receive only DT as booster at 5-6 years or at school entry.
o For immunizing children over 12 years of age and adults, the preparation of choice is DT —> 2 doses at an interval of 4 to 6 weeks, followed by a booster 6 to 12 months after the second dose.

93. According to EVINCE fast breathing in 5 mth child is defined as -

a) >30/min

b) 40

c) 50

d) 60

Correct Answer - C
Ans. is 'c' i.e., 50

94. Most important feature to diagnose severeb pneumonia-

a) Cyanosis

b) Chest indrawing

c) Nasal flaring

d) Fast breathing

Correct Answer - B
Ans. is 'b' i.e., Chest indrawing
o The only sign for severe pneumonia is chest indrawing.

95. Why a TB patient is recommend a regimen of 4 drugs on 1st visit -

a) To avoid emergence of persistors

b) To avoid side effects

c) To cure early

d) None

Correct Answer - A
Ans. is 'a' i.e., To avoid emergence of persistors
Two phase chemotheraphv
o There are two phase of treatment of tuberculosis
i) Intensive phase
This is short phase in the early course of treatment and lasts for 1-3 months.
Three or more drugs are given to kill as many bacilli as possible, which *prevents emergence of persisters.*
The risk of relapse is also lessened. Continuation phase

It is aimed at sterilizing the smaller number of dormant or persisting bacilli.

96. TB multidrug regimen is given to-

a) Prevent resistance

b) Broad spectrum

c) Prevent side effects

d) None

Correct Answer - A
Ans. is 'a' i.e., Prevent resistance
o Multidrug treatment in TB is given to ?
i) Prevent emergence of persisters
ii) Prevent relapse
iii) Prevent emergence of resistance
iv) shorten the duration of treatment

97. 4 drugs in AKT used because -

a) Decrease in resistance by mutation

b) Decrease in resistance by conjugation

c) To cure disease early

d) None

Correct Answer - A
Ans. is 'a' i.e., Decrease in resistance by mutation
o Most common method for production of resistance against ATT is mutation.
o Multidrug treatment prevents emergence of resistance. Thus, multidrug treatment prevent emergence of resistance due to mutation.

98. The direct BCG vaccination in India is given upto age of-

a) 10 year

b) 15 year

c) 20 year

d) None

Correct Answer - D
Ans. is 'None'
First you should know what does direct vaccination mean **Direct BCG vaccination**

- When BCG vaccination is given *without prior mantoux test,* it is referred as direct BCG vaccination.
- It is recommended *upto 1 year of age.*

Indirect BCG vaccination

o When BCG vaccination is given *after mantoux test,* it is referred as indirect BCG vaccination.

- It is recommended *beyond the age of 1 year.*

99. Polio virus is shed in stool upto-

a) 6 weeks

b) 8 weeks

c) 10 weeks

d) 12 weeks

Correct Answer - D
Ans. is 'd' i.e., 12 weeks
In the faces, the virus is excreted commonly for 2 to 3 weeks, sometimes as long as 3 to 4 months.

100. All are true about polio, except -

a) 99% non paralytic

b) Flaccid paralysis

c) Exaggerated tendon reflexes

d) Aseptic meningitis

Correct Answer - C
Ans. is 'c' i.e., Exaggerated tendon reflexes
o There are absent tendon reflexes (not exaggerated).
o Paralytic polio occurs in only 1% cases (that means 99% is non-paralytic).
o There is flaccid paralysis.
o Aspetic meningitis occurs in 1% of cases.

101. Trivalent oral polio vaccine contains, type 3 virus -

a) 100,000 TCID 50

b) 200,000 TCID 50

c) 300,000 TCID 50

d) 400,000 TCID 50

Correct Answer - C

Ans. is 'c' i.e., 300,000 TCID 50

Oral (sabin) polio vaccine

- It contains live attenuated viruss (type 1, 2 and 3) grown in primary monkey kidney or human diploid cell culture.
  o The vaccine contains :-
  i) Over 300,000 TCID 50 of type 1 poliovirus
  ii) Over 100,000 TCID 50 of type 2 poliovirus
  iii) Over 300,000 TCID 50 of type 3 poliovirus o Dose 2 drop (0.1 ml)
- Schedule in National Immunization Programme of India.

Dose	Age
OPV-0 (Zero dose)	At birth
OPV-1	6 weeks
OPV-2	10 weeks
OPV-3	14 weeks
OPV-B (Booster dose)	16-24 months

o *Development of immunity* --> OPV induces local intestinal immunity by production of secretory IgA as well as humoral immunity by inducing production of serum antibodies (IgG). So, it gives protection from paralysis and also prevents infection of the gut by wild viruses.

102. Criteria for defining polio epidemic are all except ?

a) 2 or more cases

b) Cases should occur in same locality

c) Caused by same virus type

d) Cases occurring during 6 month period

Correct Answer - D
Ans. is 'd' i.e., Cases occuring during 6 month period
o An epidemic of polio is defined as 2 or more local cases caused by same virus type in any 4 week period.

- So, it has following features -

i) 2 or more cases of polio
ii) Caused by same virus type
iii) Within 4 week period

103. Which is cholera vaccine -

a) Ty21 A

b) HGD -103

c) WC-rBS

d) None

Correct Answer - C
Ans. is 'c' i.e., WC-r BS

Cholera Vaccine

Killed vaccines
Dukoral (WC-rBS)
Sanchol and mORC VAX

104. ORS contains 75 mEq/l-

a) Sodium

b) Potassium

c) Glucose

d) Chloride

Correct Answer - A

Ans. is 'a' i.e., Sodium

Glucose	should at least equal that of sodium but should not exceed 111 mmol/l
Sodium	**should be within the range of 60-90 mEq/l**
Potassium	**should be within the range of 15-25 mEq/l**
Citrate	**should be within the range of 8-12 mmol/l**
Chloride	**should be within the range of 50-80 mEq/l**

105. ORS new osmolarity is -

a) 270

b) 245

c) 290

d) 310

Correct Answer - B
Ans. is 'b' i.e., 245
o Osmolarity of new ORS (reduced osmolarity ORS) is 245 mmol/litre.

106. In typhoid a permanent carrier is one who excretes bacilli for more than -

a) 3 months

b) 6 months

c) 1 year

d) 3 years

Correct Answer - C
Ans. is 'c' i.e., 1 year
Convalescent **carriers** shed the **bacilli** in feces for three weeks to three months post-infection.
Temporary **carriers** shed the **bacilli** for between three and twelve months, and chronic **carriers** shed the **bacilli for more than one** year

Bacilli presist in the gall bladder or kidney and are eliminated in the feces (fecal carriers) or urine (Urinary carrier), respectively.
o The development of the carrier state is more common in women and in older age groups (over 40 yrs)
o Carriers are the more frequent source of infection than cases.
o **Urinary carriage is less frequent but more dangerous than intestinal carriers.**
o Note —> Permanent carriers are amongst the chronic carriers.

107. Incubation period of plasmodium vivax is-

a) 5-7 days

b) 7-10 days

c) 10-14 days

d) 15-30 days

Correct Answer - C
Ans. is 'c' i.e., 10-14 days

108. Malaria is transmitted in Rural areas by ?

a) Anopheles stephensi

b) Anopheles dirus

c) Anopheles culicifacies

d) None

Correct Answer - C
Ans. is 'c' i.e., Anopheles culicifacies

109. Most common anopheles mosquito for malaria in India-

a) Anopheles stephensi

b) Anopheles subpictus

c) Anopheles fluviatilis

d) Anopheles dims

Correct Answer - A
Ans. is 'a' i.e., Anopheles stephensi
"Anopheles stephensi is the major malaria vector in India
_____ *Foundation of Community Medicine*

110. Dose of chloroquine at 4-8 year -

a) 150 mg

b) 300 mg

c) 450 mg.

d) 600 mg.

Correct Answer - B
Ans. is 'b' i.e., 300 mg
o 2 tablets of 150 mg are given.
Chloroquine tablests as per age groups

Chloroquine tablets 150 mg base

Age in years	Day 1	Day 2	Day 3
< 1	Y2	'A	1/4
1-4	1	1	'A
5-8	2	2	1
9-14	3	3	1V2
15 & above	4	4	2

Dose ofprimaquine for P falciparum (single dose) < 1 year
Contraindicated

1 - 4 years 7.5 mg.

5 - 8 years 15 mg.

9 - 14 years 30 mg.

15 years 45 mg.

Daily dose ofprimaquine for P vivax (for 14 days) < 1 year Contraindicated

1 - 4 years 2.5 mg

5 - 8 years 5 mg

9 - 14 years 10 mg

15 years 15 mg

Note : Single dose ofprimaquine for P.falciparum is 3 times the daily dose ofprimaquine for P. vivax.

111. Prophaylaxis for malaria not used-

a) Doxycycline

b) Artesunate

c) Chloroquine

d) Mefloquine

Correct Answer - B
Ans. is 'b' i.e., Artesunate
o Drugs used for prophylaxis of malaria are *chloroquine,* proguanil, *doxycycline, mefloquine* and hydroxychloroquine.

112. Chemoprohylaxis of chloroquine includes -

a) 300 mg BD/week

b) 600 mg OD/week

c) 600 mg/week

d) 300 mg OD/week

Correct Answer - D
Ans. is `d' i.e., 300 mg OD/week

Drug	Dose for chemoprophylaxis
Chloroquine	300 mg (3 tablets of 100 mg or 2 tablets of 150 mg) once a week or 100 mg/day for 6 day every week
Proguanil	400 mg per day (2 tablets of 200 mg)
Mefloquine	250 mg once a week
Doxycycline	100 mg per day.

113. Maximum density of microfilariasis in blood is reported to be between -

a) 9 pm to 11 pm

b) 11 pm to 2 am

c) 8 pm to 10 pm

d) 2 am to 5 am

Correct Answer - B
Ans. is 'B' i.e., 11 pm to 2 am
The microfilaria of W. bancrofti and B. malayi occurring in India display a nocturnal periodicity, i.e., they appear in large numbers at night and retreat from the bloodstream during the day.
This is a biological adaptation to the nocturnal biting habits of vector mosquitoes.
The maximum density of microfilaria in the blood is reported between 10 pm and 2 am.
When the sleeping habits of the host are altered, a reversal in periodicity has been observed.

114. Concentration of diethylcarbomazine in DEC medicated salt in endemic filariasis is

a) 2-4 gm/kg

b) 3-6 gm/kg

c) 5- 1 0 gm/kg

d) 10- 15 gm/kg

Correct Answer - A
Ans. is 'a' i.e., 2-4 gm/kg
o The use of DEC-medicated salt is a special form of mass treatment using very low doses of drug over a long period of time.
o Common salt medicated with *1-4g of DEC per kg* has been used for filariasis control in endemic areas of W. bancrofti and B malayi, particularly in Lakshadweep islands.
o Treatment should be continued for at least *6-9 months.*

115. Based on the type of life cycle, zoonoses are classified into all of the following except -

a) Cyclo-zoonoses

b) Meta-zoonoses

c) Anthropozoonoses

d) Sporozoonoses

Correct Answer - C
Ans. is 'c' i.e., Anthropozoonoses
Classification of zoonoses
1) Based on direction of transmission : (i) Anthropozoonoses, (ii) Zoonthroponoses, and (iii) Amphixenoses
2) Based on type of life cycle : (i) Direct zoonoses, (ii) Cyclo-zoonoses, (iii) Meta-zoonoses, and (iv) Sporozoonoses.

116. Which of the following is a zoonotic disease ?

a) Hydatid cyst

b) Malaria

c) Filariasis

d) dengue fever

Correct Answer - A
Ans. is 'a' i.e., Hydatid cyst
Important zoonoses
I. *Bacterial –4* Anthrax, Brucellosis, Ornithoses, Q-fever, Leptospirosis, TB, Plague, Tularemia, Salmonellosis.
2. Viral --> Cowpox, Monkeypox, Easternequine, encephalitis, Ross river fever, Yellow fever, Japanese encephalitis, Lassa fever, Rabies.
3. Protozoal ---> Leishmaniasis, Toxoplasmosis, Trypanosomiasis, Babesiosis.
4. Helminthic ----> Clonorchiasis, Fasciolopsis, Schistosomiasis, Echinococus (hydatid disease), Taeniasis, Trichinellosis.

117. Which virus is used to produce rabies vaccine ?

a) Wild

b) Street

c) Fixed

d) Live Attenuated

Correct Answer - C
Ans. is 'c' i.e., Fixed
o There are two strains of rabies virus : ?
i) *Street virus* - This the virus, responsible for natural rabies and is isolated from natural human or animal infection.
ii) *Fixed virus* - It is isolated after several serial intracerebral passage in rabbit. *It is used to prepare rabies vaccine.*

118. Schedule of intradermal rabies vaccine is ?

a) 2-2-0-1-0-1

b) 8-0-4-0-1-1

c) 8-4-4-1-0-1

d) 2-0-2-0-0

Correct Answer - D
Ans. is 'd' i.e., 2-0-2-0-0
WHO-recommended and alternative pre-exposure prophylactic regimens

PrEP regimen	Duration of course	Number of injection sites per clinic visit (days 0, 3, 7, 14, 21–28)
WHO-recommended intradermal regimen		
Two visits	7 days	2-0-2-0-0
WHO-recommended intramuscular regimen		
Two visits	7 days	1-0-1-0-0
PrEP under specific circumstances		
Single visit, intradermal	1 day	2-0-0-0-0
Single visit, intramuscular	1 day	1-0-0-0-0

119. Site for injection of cell culture rabies vaccine-

a) Gluteus

b) Subcutaneous

c) Deltoid

d) Anterior abdominal wall

Correct Answer - C
Ans. is 'c' i.e., Deltoid
o Rabies vaccine is given by either of two routes:?
i) *Intramuscular : Deltoid (most preferred)* and/or thigh (in children < 2 years, anterolateral thigh is preferred). *ii)Intradermal :* Over deltoid and/or thigh.
o In intramuscular regimen, injection is given into deltoid, while in intradermal regimen, injection is given intradermally over deltoid.

120. Yellow fever aedes agypti index should be ?

a) <1%

b) < 5%

c) <10%

d) < 20%

Correct Answer - A
Ans. is 'a' i.e., < 1%

121. The distance from airport or seaport which has to be free from mosquitoes is -

a) 400m

b) 500m

c) 1 km

d) 100m

Correct Answer - A
Ans. is 'a' i.e., 400 m

122. The international quarantine period for yellow fever as approved by the Government of India is ?

a) 6 days

b) 9 days

c) 10 days

d) 12 days

Correct Answer - A
Ans. is 'a' i.e., 6 days
o Quarantine period --> 6 days from the date of leaving an infected area.
o Validity of certificate —> Starts 10 days after the date of vaccination.

123. Mucocutaneous leishmaniasis is caused by -

a) L-braziliensis

b) L. tropica

c) L. donovani

d) L-orientalis

Correct Answer - A
Ans. is 'a' i.e., L. braziliensis
Leishmaniasis
o Visceral leishmaniasis (Kala azar) -L. donovani
Cutaneous Leishmaniasis
a) Oriental sore - L. tropica
b) Mucocutaneous leishmaniasis (Espundia) -L. brasiliensis

124. Epidemic typhus cause & vector -

a) Rickettessiae prowazki & Louse

b) R. typhi & mite

c) R. conorii & tick

d) R. akari & mite

Correct Answer - A
Ans. is 'a' i.e., Rickettessiae prowazki & Louse

125. Vector of scrub typhus in man ?

a) O. tsutsugamushi

b) Leptotrombidium deliense

c) Lice

d) Pediculous humanus

Correct Answer - B
Ans. is 'b' i.e., Leptotrombidium deliense
o For scrub typhus :-

- *Causative agent R. tsutsugamushi*
- *Vector trombiculid mite (Leptotrombidium delinese and L. akamushi)*

126. To achieve neonatal tetanus elimination, incidence of neonatal tetanus per 1000 live births should be reduced to less than -

a) 0.1

b) *02*

c) 0.5

d) 1.0

Correct Answer - A
Ans. is `a' i.e., 0.1
o Districts are being classified into three categories, depending on neonatal tetanus incidence rate, immunization coverage in pregnant women, and proportion of clean deliveries by trained personnel.
1. *Neonatal tetanus high risk : -*
o NT incidence rate > 1/1000 live births
or
TT2 coverage < 70%
or
Attended deliveries < 50%
2. *Neonatal tetanus control*
NT incidenc rate < 1/1000 live birth
or
TT2 coverage > 70%.
or
Attended deliveries > 50%.
3. *Neonatal tetanus elimination*
NT incidence rate < 0.1/1000 live birth

or

TTC coverage > 90%.

or

Attended deliveries > 75%

127. "Multibacillary" is *a* spectrum of disease, seen in-

a) Leprosy

b) TB

c) Tetanus

d) Trachoma

Correct Answer - A
Ans. is 'a' i.e., Leprosy

128. 2 yrs duration in terms of leprosy is with regard to -

a) Rx of paucibacillary leprosy

b) Rx of multibacillary leprosy

c) Post Rx surveillance of paucibacillary leprosy

d) Post Rx surveillance of multibacillary leprosy

Correct Answer - C
Ans. is 'c' i.e., Post Rx surveillance of paucibacillary leprosy

129. Life span of cut380a -

a) 10 yrs

b) 20 yrs

c) 1 yrs

d) None

Correct Answer - A
Ans. is 'a' i.e., 10 years

130. Copper T is ideally inserted at-

a) Just before menstruation

b) On the 26th day

c) Just after menstruation

d) On the 14th day

Correct Answer - C
Ans. is 'c' i.e., Just after menstruation
Timing of insertion
Although the loop can be inserted at almost anytime during a woman's reproductive years (except during pregnancy), *the most propitious time for loop insertion is during mensturation or within 10 days of the beginning of a menstural period.*
o During this period, insertion is technically easy because the diameter of the cervical canal is greater at this time than during the secretory phase.
o The uterus is relaxed and myometrial contractions which might tend to cause expulsion are at a minimum.
o In addition, the risk that a woman is pregnant is remote at this time.

131. Absolute contraindication for IUD (Intra Uterine Contraceptive Device) are all except ?

a) Pregnancy

b) Undiagnosed vaginal bleeding

c) Pelvic inflammatory disease

d) Uterine malformation

Correct Answer - D
Ans. is 'd i.e., Uterine malformation
Contraindications
ABSOLUTE:
a) Suspected pregnancy
b) Pelvic inflammatory disease
c) Vaginal bleeding of undiagnosed etiology
d) Cancer of the cervix, uterus or adnexa and other pelvic tumours
e) Previous ectopic pregnancy
RELATIVE :
a) Anaemia
b) Menorrhagia
c) History of PID(Pelvic Inflammatory Disease) since last pregnancy
d) Purulent cervical discharge
e) Distortions of the uterine cavity due to congenital malformations, fibroid
f) Unmotivated person

132. All of the following are postcoital contraception methods except-

a) Mifepristone

b) IUD

c) Levonorgestrol

d) Barrier methods

Correct Answer - D
Ans. is 'd' i.e., Barrier methods

133. Mean birth weight in India -

a) 2.0 - 2.4 kg

b) 2.4 - 2.5 kg

c) 2.5 - 2.9 kg

d) > 3.0 kg

Correct Answer - C
Ans. is 'c' i.e., 2.5 - 2.9 kg
Mean birth weight in Different parts of the world Region
Mean birth weight
North America, Western Europe, Australia
3.5 - 3.6 kg
Eastern Europe 3.1 - 3.3 kg
Africa and East Asia 2.9 - 3.1 kg
South Asian countries 2.7 kg
o In India, mean birth weight ranges from 24.9 kg to 28.8 kg.

134. MCH care is assessed by -

a) Death rate

b) Birth rate

c) Maternal mortality rate

d) Anemia in mother

Correct Answer - C
Ans. is 'c' i.e., Maternal mortality rate
Important MCH indicators
1. Maternal mortality rate
2. Mortality in infancy and childhood
   a) Perinatal mortality rate
   b) Neonatal mortality rate
   c) Post - neonatal mortality rate
   d) Infant mortality rate
   e) 1-4 year mortility rate
   f) Under 5 mortality rate
   g) Child survival rate

135. Quarter of postnatal mother death is caused by ?

a) Infection

b) Bleeding

c) Eclampsia

d) Anemia

Correct Answer - B
Ans. is `b' i.e., Bleeding
o 25% of maternal death are caused by severe bleeding, generally occuring post-partum.

136. Maternal mortality is maximum in which period

a) Antepartum

b) Peripartum

c) Postpartum

d) None

Correct Answer - B
Ans. is 'b' i.e., Peripartum
o *Maternal death mostly occur from the third trimester to the first week after birth.* Studies show that mortality risks for mothers are particularly elevated in the first two days after birth.

137. Maximum maternal mortality during peripartum period occurs at -

a) Last trimester

b) During labor

c) Immediate post-partum

d) Delayed post-partum

Correct Answer - C
Ans. is 'c' i.e., Immediate post-partum
o Studies show that mortality risks for mother are particularly elevated in the first two days after birth, i.e. immediate post-partum period.
o A women is most vulnearble at post-partum period. About 50-70% maternal death occuring in the post-partum period of which 45% deaths occur in first 24 hours after delivery and more than two-third druing the first week.

138. Calculate IMR if in a population of 100000 there are 3000 live births in a year and 150 infant deaths in the same year -

a) 75

b) 18

c) 5

d) 50

Correct Answer - D
Ans. is `d' i.e., 50

139. Which is the least common cause among these of infant mortality in India -

a) Infections

b) Prematurity

c) Birth injuries

d) Congenital malformations

Correct Answer - C
Ans. is 'c' i.e., Birth injuries

140. Best indicator of availability,utilisation & effectiveness of health services-

a) IMR

b) MMR

c) Hospital bed OCR

d) DALY

Correct Answer - A
Ans. is 'a' i.e., IMR

141. Most common cause of infant mortality?

a) LBW

b) Injury

c) ART

d) Tetanus

Correct Answer - A
Ans. is 'a' i.e., LBW

142. Perinatal mortality rate include which of the following?

a) Abortions + Still birth early neonatal deaths

b) Still birth + early neonatal deaths

c) Abortions + early neonatal deaths

d) Deaths up to 42 dys after birth

Correct Answer - B
Ans. is b' i.e., Still birth + early neonatal death

143. Human milk with respect to cow milk has -

a) Less fat

b) Less protein

c) Less carbohydrate

d) a and b

Correct Answer - D

Ans. is 'a' i.e., Less fat; `b' Less protein

Human milk has less fat, less protein, more carbohydrates and less calcium, in comparison to cow milk.

Human milk has less sodium, potassium and chloride. However, these substances are in correct amount (though less) in human milk.

Salts (meq/L)	**Cow's milk**	**Human milk**
Sodium	25 (too much)	6.5 (correct amount)
Chloride	29 (too much)	12 (correct amount)
Potassium	35 (too much)	14 (correct amount)

144. What is absent in breast milk ?

a) Vit K

b) Vit C

c) Lactose

d) Vit A

Correct Answer - A
Ans. is 'a' i.e., Vitamin K
o Milks from the mother whose diet is sufficient and properly balanced will supply all the necessary nutrients except fluoride and Vitamin D.
o The iron content of human milk is low, but most normal term infants have sufficient iron stores for the first 4-6 months. Human milk iron is well absorbed. Nonetheless, by 6 months the breast-fed infant's diet should be supplemented with iron fortified complementary foods.
o The Vitamin K content of human milk is low and may cause hemorrhagic disease of newborn.

145. Colostrums has in compared to normal milk ?

a) Decreased K

b) Decreased Na

c) Increased proteins

d) Increased calories

Correct Answer - C
Ans. is 'c' i.e., Increased proteins

146. In normal delivery, breast feeding should be started?

a) *6* hour after delivary

b) 2 hour after delivary

c) 4 hour after delivary

d) None

Correct Answer - D
Ans is d None
o *Breast feeding should be initiated within 30 min. of a normal vaginal delivery.*
o *Breast feeding should be initiated within 4 hrs of delivery by caesarian section.*

147. ICDS was launched at-

a) Community development block

b) Town level

c) City level

d) District level

Correct Answer - A
Ans. is 'a' i.e., Community development block
o ICDS was launched on 2"d October 1975 in 33 *Community development block.*
o ICDS programme is a globally recognized community based early child care programme, which addresses the basic interrelated needs of yound children, expectant and nursing mothers and adolescent girls across the life cycle, in a holistic manner.

148. Nutritional supplement for two year old child under ICDS scheme is -

a) 200 Calorie

b) 300 Calorie

c) 400 Calorie

d) 500 Calorie

Correct Answer - D
Ans. is 'd' i.e., 500 calories
o Under ICDS Scheme supplementary nutrition is given to:
Children below 6 yrs
Nursing mothers
Expectant mothers
o The aim is to supplement nutritional intake for
1) Each child 6-72 months of age —) 500 calories and 12-15 grams of protein (financial norm of Rs 6.00 per child per day).
2) Severely malnourished child 6-72 months of age --> 800 calories and 20-25 grams protein (financial norm of Rs 6.00 per child per day).
3) Each pregnant and nursing woman 600 calories and 18-20 grams of protein (financial norm of Rs 5.00 per beneficiary per day).

- Under the revised nutritional and feeding norms for supplementary nutrition, State governments/UTs have been mandated to provide more than one meal to the children who come to AWCs, which include providing a morning snack in the form of milk/banana/egg/seasonal fruit/micronutrient fortified food followed by a hot cooked meal. For children below 3 years of age and pregnant & lactating mothers, *"take home ration"* is to be provided. o *Supplementary nutrition is given for 300 days a year.*

149. Direct cash transfer scheme to adolescent girls is covered under -

a) Indira Gandhi scheme

b) Rajiv Gandhi scheme

c) CSSM

d) RCH

Correct Answer - B
Ans. is 'b' i.e., Rajiv Gandhi Scheme
o Direct cash transfer scheme to adolescent girls comes under *"Rajiv Gandhi Scheme for Empowerment of Adolescent Girls"*

150. Child protection scheme is under which ministry -

a) Ministry of health and family welfare

b) Ministry of Social welfare

c) Ministry of women and child development

d) Ministry of education

Correct Answer - C
Ans. is 'c' i.e., Ministry of women and child development
o In 2006 the Ministry of Women and Child Development (MWCD) proposed adoption of Integrated Child Protection Scheme (ICPS).
o In 2009 the central government take the scheme its approval and has begun the extensive task of providing children with a protective and safe environment to develop and florish.
o The purpose of the scheme is to provide for children in difficult circumstances, as well as to reduce the risks and vulnerabilities children have in various situations and actions that lead to abuse, neglect, exploitation, abondonment and separation of children.

151. Homes where children are placed under the care of doctors and psychiatrists are called -

a) Foster homes

b) Borstals

c) Remand homes

d) Child guidance clinics

Correct Answer - C
Ans. is 'c' i.e., Remand homes
Child placement :
o *Orphanages :* For children who have no home or cannot be taken care of by their parents.
o *Foster Homes :* Several types of facilities for rearing children other than in natural families.
o *Adoption :* Legal adoption confers upon child and the adoptive parents, rights and responsibilities similar to that of natural parents.
o *Remand Homes :* Child is placed under the care of doctors, psychiatrists and other trained personnel to improve the mental and physical well being of the child.

152. Ujjwala is for -

a) Child abuse

b) Child trafficking

c) Child labour

d) None

Correct Answer - B
Ans. is 'b' i.e., Child trafficking
o The *'Ministry of women & child Development' has formulated a new comprehensive scheme for prevention of trafficking* and rescue, rehabilitation and reintegration of victims of trafficking and commercial sexual exploitation.
o The new scheme has been conceived primarily for the purpose *preventing trafficking* on the one hand and rescue and rehabilitation of victims on the other.
o Target group includes -
i) Women & children who are vulnerable to trafficking for commercial sexual exploitation.
ii) Women & children who are victims of trafficking for commercial sexual exploitation.

153. Perinatal mortality includes deaths-

a) After 28 weeks of gestation

b) First 7 days after birth

c) Both

d) From period of viability

Correct Answer - C
Ans. is 'c' i.e., Both

154. Energy requirement in late pregnancy -

a) 2500 cal

b) 1400 cal

c) 1000 cal

d) 1000 cal

Correct Answer - A
Ans. is 'a' i.e., 2500 Cal

155. Protein quality assessment is best done by ?

a) NPU

b) Biological value

c) Digestibillity coefficient

d) Amino acid score

Correct Answer - A
Ans. is 'a' i.e., NPU
o Net protein utilization is considered to be most practile because it is the product of biological value and digestibility coefficient divided by 100.

156. The highest concentrations of Vitamin A is seen in -

a) Polar bear liver

b) Cod liver oil

c) Shark liver oil

d) Papaya

Correct Answer - B
Ans. *is* 'b' i.e., Codliver oil
Amongst the given options, cod liver oil has highest concentration.

157. 'Vitamin A requirement in infant is-

a) 350 g

b) 600 g

c) 800 g

d) 1000 g

Correct Answer - A
Ans. is 'a' i.e., 350 g

158. Jowar is Pellogerogenic due to excess of -

a) Leucine

b) Lysine

c) Tryptophan

d) Methioninc

Correct Answer - A
Ans. is 'a' i.e., Leucine
o Similar to maize, *Jowar* also Contains excess of *leucine.*
o Leucine interferes with conversion of tryptophan to niacin.
o Pellagra has been reported in India in *Telangana area of Andhra Pradesh* because of Sower (Sorghum vulgare) consumption.

159. For every 100 kilocalories, vitamin B, required is -

a) 0.05 mg

b) 0.5 mg

c) 5.0 mg

d) 1.0 gn

Correct Answer - A
Ans. is 'a' i.e., 0.05 rug
Thiamine is required 0.5 mg per 1000 K. cal of energy intake, i.e., 0.05 mg per 100 Kcal.

160. Daily iron requirement in healthy Indian male is-

a) 35 mg

b) 17 mg

c) 10 mg

d) 5 mg

Correct Answer - B

Ans. is 'b i.e., 17 mg

Group	Iron absorbed/day(mg)	Recommended intake
Adult male	0.84	17
Adult female (mensturating)	1.65	21
Pregnant woman	2·80 (extra 1.15)	35 (extra 14 mg/day)
Lactating woman (0-6 months)	1.65	21
Infant (6-12 months)	0.7	S
Adolescent boys (13-15 years)	1.6	32
Adolescent girls (13-15 years)	1.36	27

161. Iodine RDA is -

a) 300 microgram

b) 500 microgram

c) 150 microgram

d) 50 microgram

Correct Answer - C
Ans. is `c" i.e., 150 microgratn
o The RDA of iodine for adults is 150 microgram.

162. Iodine deficiency control programme ?

a) Health education

b) Water testing

c) Fortification of salt

d) None

Correct Answer - C
Ans. is 'c' i.e., Fortification of salt
Iodized salt (salt fortified with iodine) is most economical, convenient and effective means of mass prophylaxis in endemic area.

163. Iodine comes in iodine salt. Req uirm en t at production and consumer level respectively -

a) 20 & 10 PPNI

b) 30 & 10 PPM

c) 30& 15 PPM

d) 30 & 20 PPM

Correct Answer - C
Ans. is "c' i.e., 30 & 15 PPM

164. Maximum calcium is seen in -

a) Jowar

b) Bajara

c) Ragi

d) None

Correct Answer - C
Ans. is 'c' i.e., Ragi
Millets
o The term "millet" is used for smaller grains : -
i) Jowar (Sorghum)
ii) Bajara (Pearl millet)
iii) Ragi
o Amongst *millets*

Maximum protein	*Bajra*
Maximum fat	*Bajra*
Maximum carbohydrate	*Jowar*
Maximum minerals & Calcium	*Ragi*
Maximum vit B complex	*Jowar*
Maximum energy	*Bajra*
Maximum iron	*Bajra*

165. Which nut has highest protein content -

a) Walnut

b) Groundnut

c) Almond

d) Coconut

Correct Answer - B
Ans. is 'b' i.e., Groundnut
o Nuts commonly consumed in India are coconut, groundnut, cashew nut, walnut and almond. o Groundnut has maximum protein contents.
o There is no need to remember this table. I am summarizing it for you.

- *Groundnut has maximum protein and Carbohydrate.*

Coconut has minimum protein.
Walnut has maximum fat.
Groundnut has minimum fat.
o *Almond has minimum carbohydrate.*
Almond has maximum minerals.
Coconut has minimum minerals.

166.

Students receive how much cereal /day in mid day meal prog -

a) 50 gm

b) 100 gm

c) 150 gm

d) 75 gm

Correct Answer - D
Ans. is 'd' i.e., 75 gm

167. Mid day meal programme comes under ?

a) Ministry of Social Welfare

b) Ministry of education

c) Ministry of Human Resources Developments

d) None

Correct Answer - B
Ans. is 'b' i.e., Ministry of education
It is also called as National Programme of Nutritional Support to Primary Education. It was launched in 1995. Mid-day meal should provide 1/3 of total energy and 1/2 of total protein requirements.

168. Calcium requirement above the normal during the first six month of lactation is -

a) 400Mgiday

b) 550mg/day

c) 600mg/day

d) 750mg/day

Correct Answer - C
Ans. is 'c' i.e., 600 mg

169. Adult non-pregnant female requires, Calcium per day -

a) 400 mg

b) 600 mg

c) 800 mg

d) 1000 mg

Correct Answer - B
Ans. is 'b' i.e., 600 mg
o Adult non-pregnant female requires 600 mg calcium per day.

170. The ICDS scheme is sponsored by

a) Ministry of health & family welfare

b) Ministry of Social welfare

c) Ministry of education

d) None

Correct Answer - B
Ans. is 'b' i.e., Ministry of social welfare

171. Most common cause of pollution of drinking water

a) Domestic waste

b) Industrial waste

c) Radioactive substances

d) Agricultural pollutants

Correct Answer - B
Ans. is 'b' i.e., Industrial waste
o Two most common causes of water pollution
i) Domestic sewage
ii) Industrial wastes
Among these two industrial wastes are the most common

172. Which of the following is water-related disease

a) Yellow fever

b) Scabies

c) Cholera

d) Dysentery

Correct Answer - A
Ans. is 'a' i.e., Yellow fever
* *Water can* cause disease not only by drinking but also by various other modes, directly or indirectly.
* Depending upon the type of transmission, the diseases are classified.
* *Public Health Classification of Waterborne diseases*
* Waterborne *diseases:* Occur due to drinking contaminated water, transmitted by the faeco-oral route. Examples: Typhoid, Cholera. Dysentery, Viral Hepatitis A
* *Water washed diseases:* Include infections of the outer body surface which occur due to inadequate use of water or improper hygiene. Examples: Scabies, Trachoma, Typhus, Bacillary dysentery, Amoebic dysentery
* *Water-based diseases:* Refers to infections transmitted through an aquatic invertebrate animal. Examples: Schistosomiasis. Dracunculiasis (Guinea worm disease)
* *Water-related diseases (Water breeding diseases):* Are infections spread by insects that depend on water. Examples: Malaria, Filariasis, Dengue, Yellow fever, Onchocerciasis

173. True about slow sand filter is

a) Occupies less space

b) More expensive

c) Requires longer duration

d) Sand size 0.4 - 0.7 mm

Correct Answer - C
Ans. is 'c' i.e., Requires longer duration
The slow sand filter requires more time (duration).
The size of the sand is smaller (0.2-0.3 mm).
Slow sand filter occupies a large area (more space).
The cost of construction is cheaper for the slow sand filter.

174. Test for coliform count ?

a) Eijkman test

b) Casoni's test

c) Nitrate test

d) Urease test

Correct Answer - A

Ans. is 'a' i.e., Eijkman test

- Adler analysing presumptive coliform count, *E coli count is* cofirmed by other tests like Eijk **m** an **t test** and indole production.

175. Above which level of heat stress index it is not possible to work comfortably -

a) 20 - 40

b) 40 - 60

c) 60 - 80

d) 80 - 100

Correct Answer - B
Ans. is b'., 40-60
o HSI 40-60 causes severe heat strain and it is not possible to work comfortably.

176. Which of the following is not a indoor air pollutant?

a) Carbon monoxide

b) Nitrous oxide

c) Radon

d) Mercury

Correct Answer - D

Ans. is 'd i.e., Mercury

- Indoor air pollution refers to chemical. biological and physical contamination of indoor air, i.e. *the pollution of air with in and around building and structures.*
- As most of the people work, study, eat, drink and sleep in enclosed environments (i.e. indoor) where air circulation *may* be restricted —> Most people spend large portion of time indoors, as much as 80-90% of their lives. Therefore, more people suffer from indoor air pollution than outdoor pollution.

Basic Information on Pollutants and Sources of Indoor Air Pollution

- Asbestos
- Biological Pollutants
- Carbon Monoxide (CO)
- Formaldehyde/Pressed Wood Products
- Lead (Pb)
- Nitrogen Dioxide (NO2)
- Pesticides
- Radon (Rn)
- Indoor Particulate Matter
- Secondhand Smoke/ Environmental Tobacco Smoke
- Stoves, Heaters, Fireplaces and Chimneys
- Volatile Organic Compounds (VOCs)

177. Which agency monitors air quality in India ?

a) Central pollution control board

b) Central air quality board

c) Central public works dept

d) None

Correct Answer - A
Ans. is 'a' i.e., Central pollution control board
The National Air Quality Monitoring Programme, sponsored by the *Central Pollution Control Board (CPCB)* since 1990, has generated database over last 14 years in 10 major Indian cities.

178. In winter, water vapours and pollutants comes to lie in the lowermost layer of atmosphere by -

a) **Acid rain**

b) Greenhouse effect

c) Temperature inversion

d) None

Correct Answer - C
Ans. is `c' i.e., Temperature inversion
A temperature inversion is a thin layer of the atmosphere where the normal decrease in temperature with height swithees to the temperature increasing with height.

- An inversion can lead to pollution such as *smog being trapped close to the grand* (lower layers of atmosphere).

Temperature inversion may occur during the passage of a cold front or result from the invasion of sea air by a cooler onshore breeze.
o Overnight radiative cooling of surface air often results in a nocturnal temperature inversion that is dissipated after sunrise by the warming of air near the ground.

179. The source of endogenous radiation is

a) Radon

b) Potassium

c) Thorium

d) Uranium

Correct Answer - B
Ans. is 'b' i.e.. Potassium
o Radiation is part of man's environment.

180. The maximum permissible level of occupational exposure to radiation is...per year -

a) 5 rad

b) 2 rad.

c) 10 rad

d) 50 rad

Correct Answer - A
Ans. is 'a' i.e., 5 Rad
The amount of radiation received from outer space and background radiation has been estimated to be 0.1 rad a year. Apparently, this does not at present constitute a hazard. The additional permissible dose from man made sources should not exceed 5 rad a year.

181. Psychrometer Psychrometer is used to measure -

a) Humidity

b) Air velocity

c) Room temperature

d) Radiant temperature

Correct Answer - A
Ans. is 'a' i.e., Humidity
Humidity is measured by
o Dry and wet Bulb hygrometer
o Sling psychrometer
o Assmann psychrometer
o Air velocity is measured by *anemometer.*
o *Radiant temprature* is measured by *Globe thermometer.* o *Room temprature* is measured by *bulb thermometer.*

182. Not safe disposal but gelid for soil building -

a) Incineration

b) Controlled tipping

c) Composting

d) None

Correct Answer - C
Ans. *is* 'c' i.e., Composting
Composting
C'ompostig is a method of combined disposal of refuse and nightsoil or sluge.
o It is process of nature whereby orgaic matter breaks down under bacterial action resulting in the formation of
relatively stable humus-like material, called the compost which has considerable manurial value for the soil.
o Compost contains no or few disease producing organisms and is a good soil builder containing small amounts of
the major plant nutrients such as nitrates and phosphates.
o There are following two methods of composting.
i) *Bangalore method (Anaerobic method)*
ii)Mechanical composting (Aaerobic method).

183. The heart to the activated sludge process is *?*

a) Primary sedimentation tank

b) Sludge digester

c) Aeration tank

d) Final settling tank

Correct Answer - C
Ans. is *'c' i.e.,* Aeration tank
o The heart of the activated sludge process is aeration tank.

184. Transovarian transmission of infection occurs in -

a) Fleas

b) Ticks

c) Mosquitoes

d) b and c

Correct Answer - D
Ans. is 'b' i.e., Ticks; 'c' i.e., Mosquitoes

185. Transovarian transmission Is seen in which infection -

a) Plague

b) Guinea

c) Yellow fever

d) All

Correct Answer - C
Ans. is 'c' i.e.. Yellow fever

186. Study of physical, social and cultural history of man is known as?

a) Social science

b) Anthropology

c) Acculturation

d) Sociology

Correct Answer - B
Ans. is 'b i.e. Anthropology
o Anthropology is study of physical, social and cultural history of man.
o Anthropology may be:
(i) Physical anthropology: Study of human evolution, racial differences, inheritance of bodily traits, growth and decay of human organisms
(ii) Social anthropology: Study of the development and various types of social life.
(iii) Cultural anthropology: Study of total way of life of contemporary primitive man. his way of thinking, feeling and action.
(iv) Medical anthropology: Deals with the cultural component in the ecology of health and disease.

187. Sociology -

a) Study of human relationship

b) Study of behavior

c) Both

d) None

Correct Answer - C
Ans. is 'c' i.e., Both
o Sociology deals with the study of human relationships and of human behaviour.

188. Study of person to person inter-relationship in a society -

Economics

a) Economics

b) Suciology

c) Psychology

d) Anthropology

Correct Answer - B
Ans. is 'b' i.e., Sociology

189. Custom is defined as -

a) Established pattern of behavior

b) Prescribed order of cremony

c) Ban to a particular activity

d) None

Correct Answer - A
Ans. is 'a' i.e., Established pattern of behavior

190. Chronological age 10yrs, mental age 4yrs. What that person called as?

a) Idiot

b) Imbecile

c) Normal

d) Genius

Correct Answer - B
Ans. is 'b' i.e., Imbecile

191. Objectives of National Mental Health programme are all accept -

a) Promote community participation

b) Promote application of mental health knowledge

c) Provides free antipsychotic drugs to all

d) Provide accessibility of mental health care

Correct Answer - C

Ans. is 'c' i.e., Provides free antipsychotic drugs to all

National Mental Health Prim-amine (NMIIPI

The (io% eminent of India has lauched the National Mental Health Programme in 1982, with the following objectives:

a) To ensure availability and accessibility of minimum mental healthcare for all in the foreseeable future, particularly to the most vulnerable and underprivileged section of the population.

b) To encourage the application of mental health knowledge in general healthcare and in social development.

c) To promote community participation in the mental health service development.

o The District Mental Health Programme (DM H P) was launched under NMHP in the year 1996, which was based on *'Bellary Model'* with the following components.

a) Early detection and treatment.

b) Training of general phvsians and health workers.

c) IEC' : Public awareness generation.

d) Monitoring (for simple record keeping).

o The NMHP was re-strategized in year 2003 with following components:?

1) Extension of DMHP to 100 districts.

2) Upgradation of psychiatric wing in medical colleges/General hospitals.
3) Modernization of state mental hospitals.
4) IEC
5) Monitoring and evalutation.

192. Effect of environment on genes is called?

a) Positive Eugenics

b) Negative Eugenics

c) Euthenics

d) Enthenics

Correct Answer - C
Ans. is 'c' i.e., Euthenics
Eugenics

- Science which aims to improve the genetic endoment of human population.

o That is improving the quality of the human species or a human population by *genetic manipulation.*
o Eugenis may be :
1. Negative Discouraging reproduction by persons having genetic defect or presumed to have inheritable undesirable traits this includes abortions, sterilization & other methods family planing.
2. Postive Eugenics -> Encouraging reproduction presumed to have inheritable desirable trait. For example, in vitro-fertilization, cloning, egg transplantation etc.
Euthenick

- Euthenics deal with human improvement through altering the external environment *(environmental manipulation).*
- **It** includes education, prevention and removal of contagious disease and parasites, education regardin^{g} home **economics,** sanitation and housing.

193. Hardly-weinberg law is related to-

a) Population genetics

b) Health economics

c) Social medicine

d) None of the above

Correct Answer - A
Ans. **is 'a' i.e., Population genetics**
<u>Hardly-Weinberg law</u>
The hardly-weinherg law states that *"The relative frequencies of each gene allele tends to remain constant from generation to generation".*
o Thus, the study of gene frequencies, and the influences which operate to alter the "gene pool" and their long term consequences is the central theme in *population genetics.*

194. Acculturation is?

a) Traige

b) Cultural changes due to socialisation

c) Attitude

d) Belief

Correct Answer - B

Ans. is 'b' i.e., Cultural changes due to socialisation
Acculturation is a process of social, psychological, and cultural change that stems from the balancing of two cultures while adapting to the prevailing culture of the society. Acculturation is a process in which an individual adopts, acquires and adjusts to a new cultural environment.

195. Amount of waste infectious produced in hospitals?

a) 45%

b) 65%

c) 80%

d) 100%

Correct Answer - A
Ans. is 'a' i.e., 45%

196. Which waste cannot be incinerated -

a) Anatomic waste

b) Microbiology waste

c) Halogenated plastic

d) Infectious waste

Correct Answer - C
Ans. is 'c' i.e., Halogenated plastic

197. Best for Incineration of infectiouswaste ?

a) Double - chamber

b) Single - chamber

c) Triple - chamber

d) None

Correct Answer - A
Ans. is 'a' i.e., Double-chamber
o Three basic kinds of incineration technology are of interest for treatment of healh care wastes :
i) *Double-chamber* pyrolytic incinerators which may be especially designed *to* burn infectious health care waste.
ii) *Single-chamber* furnaces with static grate, which should be used only if pyrolytic incinerators are not affordable.
iii) *Rotary kilns* operating at high temperatures, capable of causing decomposition of genotoxic substances and heat-resistant chemicals.

198. Which is the calamity with most amount of damage -

a) Flood

b) Earthquake

c) Landslides

d) Volcanoes

Correct Answer - A
Ans. is 'a' i.e., Floods

199. True about triage -

a) Yellow-least priority

b) Red -morbidity

c) Green-ambulatory

d) Blue-ambulatory

Correct Answer - C
Ans. is 'c' i.e., Green ambulatory

200. High priority in triage is for -

a) Red color

b) Yellow color

c) Green color

d) Black color

Correct Answer - A
Ans. is 'a' i.e., Red colour

201. Which of the following is the nodal centre for disaster management

a) **PHC**

b) **CHC**

c) **Control room**

d) **None**

Correct Answer - C
Ans. is `C' i.e., Control room
o The control room is the nodal center in terms of disaster management.
o The control room plays a vital role in disaster management activation.
o It coordinates the flow of information with respect to activities associated with relief operations.

- During ***normal times*** it ***maintains*** systematic data-based information of the resources available, important Government and non-Government officials, local bodies and NGOs.
- During a ***crisis (disaster)*** it is expected to function as a center for decision making and to keep constant touch with the affected areas to provide organized relief and rescue operations immediately after occurrence or receipt warning of disaster.

o There will be separate control rooms at the block level.

202. Black color in triage -

a) **Death**

b) **Transfer**

c) **High priority**

d) **Low priority**

Correct Answer - A
Ans. is 'a' i.e., Death

203. Propaganda Is defined as -

a) Forcing of knowledge into mind

b) *Active* aquiring of knowledge

c) Requiring knowledge after thinking

d) Training of people to *use* judgment before acting

Correct Answer - A
Ans. is 'a' i.e., Forcing of knowledge into mind

204. All are true about panel discussion except ?

a) Two way discussion

b) 6 to 20 members participates

c) Chief members initiates

d) Each one prepares the topic of discussion

Correct Answer - B
Ans. is 'b' i.e., 6-20 members participates
Panel discussion
o It is a *two way communication.*
4 - 8 persons who are qualified to talk about a topic and discuss a given problem *in front of a large group or audience.*
o The panel comprises a *chairman.*
o The chairman opens the meeting, **welcomes the** group and introduces the panel speakers.
o He indroduces topic briefly and invite the panel speakers to present their point of view.
o After the main aspects of subject are explored by panel speakers, the audience is invited to take part.
o If members of the panel are unacquainted with this method, they may have a preliminary meeting, *prepare the material* on the subject and decide upon the method and plan of presentation.

205. Multi-purpose worker scheme in India was introduced following the recommendation of ?

a) Srivastava Committee

b) Bhore Committee

c) Kartar Singh Committee

d) fsludaliar Committee

Correct Answer - C
Ans. is 'c' i.e., Kartar Singh committee
Health Planning in India
The guide lines for national health planning were provided by a number of committees.
o These committees were appointed by the Government of India from time to time to review the existing health situation and recommend measures for further action.

206. Bajaj committee in 1986 proposed?

a) Multipurpose health worker

b) Manpower and planning

c) Rural Health Service

d) Integrated health services

Correct Answer - B
Ans. is 'b' i.e., Manpower and planning

207. Millennium developmental goal for HIV/ AIDS ?

a) 6

b) 3

c) 8

d) 1

Correct Answer - A
Ans. is `a' i.e., 6
o Goal 6 is to combat HIV/AIDS; malaria and other diseases.

208. A trained dal caters for a population of -

a) 1000

b) *2000*

c) 3000

d) 4000

Correct Answer - A
Ans. is 'a' i.e., 1000
Local dais (Traditional birth attendants)
Under *Rural Health Scheme,* all categories of local dies are trained to improve their knowledge in the elementry concepts of : -
i) MCH
ii) Sterilization (Small family norm)
Training
Training is for *30 working days.*
o They are paid a *stipend o/ Rs. 300* during training period.
o Training is given for 2 days in a week at PHC, subcentre or MHC centre.
o On the remaining four days of the week they accompany the health worker female.
o During her training period each dai is required to *conduct at least 2 deliveries* under the supervision of health worker.
The national target is to train one local dai in each village.
Note : *One village is equivalent to 1000 rural population.*

209. Kit B is given at -

a) PHC

b) Subccnter

c) CHC

d) FRU level

Correct Answer - B
Ans. is 'b' i.e., Subcenter

210. All are principles of primary health care except?

a) Intersectoral coordination

b) Community participation

c) Appropriate technology

d) Decentralised approach

Correct Answer - D
Ans. is 'd' i.e., Decentralised approach
o There are 4 main principles of primary health care :
1) Equitable distribution
2)Community participation
3)Intersectorial coordination
4) A ppro priate technology

211. NVBDCP includes all except?

a) Malaria

b) Filarial

c) Kala azar

d) Chikungunya

Correct Answer - D
Ans. is d i.e., Chikungunya
o National Vector Borne Disease control programme (NVBDCP) includes *malaria, dengue,filaria,* JE and kala-azar. Health programmes in India
o Since India become indepedent, several measures have been undertaken by National Government to improve the health of the people.
o Prominant among these measures are the NATIONAL HEALTH PROGRAMMES which have been launched
by the *central Government* for control/eradication of the communicable diseases, improvement of environmental sanitation, raising the standard of nutrition, control of populattion and improving rural health. National Health Programmes curently working in India : ?
1. National vector Borne Disease Control Programme *Malaria,* Dengue, *Filaria,* JE, Kala-azar.
2. National leprosy eradication programme.
3. Revised National TB control programme.
4. National programme for control of blindness.
5. National iodine deficiency disorders control programme.
6. National menal health programme
7. National AIDS control programme

3. National cancer control programme
). UIP
). National Programme for prevention & control of deafness.
.. Piolet Progamme on prevention & control of DM, CVD, & deafness.
2. National tobacco control programme
3. RCH programme.

212. National Leprosy Eradication Programme was started in -

a) 1949

b) 1955

c) 1973

d) 1983

Correct Answer - D
Ans. is 'd' i.e., 1983

213. Revised strategy for NPCB includes all except ?

a) Fixed facility surgery

b) IOL implantation for cataract

c) Mobile surgical camps

d) Uniform distribution

Correct Answer - C
Ans. is 'c' i.e. Mobile surgical camps
NATIONAL PROGRAMME FOR CONTROL OF BLINDNESS (NPCB)
The national program for Control of Blindness (NPCB) has been re-designated recently as the National Programme for Control of Blindness and Visual Impairment
Launched in 1976,
It is a 100% centrally sponsored scheme.
Its objective is to reduce the prevalence of eye diseases in general, and the prevalence of blindness from 1.40% to 0.3% by 2000 AD.
Apex Centre (National Eye Institute) is
Dr. Rajendra Prasad Centre for Ophthalmic Sciences (New Delhi, AIIMS).
Revised strategies of NPCB
a) To make NPCB more comprehensive by strengthening services for other causes of blindness like corneal blindness(requiring transplantation of donated eyes), refractive errors in school-going children, improving follow-up services of cataract operated persons and treating other causes of blindness like glaucoma; To shift from the eye camp approach to a fixed facility surgical approach and from conventional surgery to IOL implantation for better quality of post-

operative vision in operated patients.
b) To expand the World Bank project activities like construction of dedicated eye operation theatres, eye wards at the district level, training of eye surgeons in modern cataract surgery and other eye surgeries and supply of ophthalmic equipment, etc. to the whole country.
c) To strengthen the participation of Voluntary Organizations in the program and to earmark geographic areas to NGOs and Government Hospitals to avoid duplication of effort and improve the performance of Government Units like Medical Colleges, District Hospitals, Sub Divisional Hospitals, Community Health Centres, Primary Health Centres.
d) To enhance the coverage of eye care services in tribal and other under-served areas (uniform distribution) through the identification of bilateral blind patients, preparation of village-wise blind register and giving preference to bilateral blind patients for cataract surgery.

214. Under RCH programme, intervention done in selected districts -

a) Immunization

b) Treatment of STD

c) ORS therapy

d) Vitamin A supplementation

Correct Answer - B

Ans. is 'b' i.e.. Treatment of STD

o Interventions in all Districts

o Child survival interventions i.e., immunization, vitamin A (to prevent blindness), oral rehydration therapy and prevention of deaths due to pneumonia.

Safe motherhood interventions e.g., antenatal check up, immunization for tetanus, safe delivery, anaemia control programme.

- Implementation of Target Free Approach
- High quality training at all levels
- IEC activities.

Specially designed RCH package for urban slums and tribal areas.

- District sub-projects under local capacity enhancement.
- RTI/STD clinics at District Hospitals (where not available).
- Facility for safe abortions at PHCs by providing equipment, **contractual doctors etc.**

Enhanced community participation through Panchayats, Women's Groups and NGOs.

- Adolescent health and reproductive hygiene.

o jnten-ent ions in selected States/Distts.

a Screening and treatment of RTI/STD at sub-divisional level.

- Emergency obstetric care at selected FRUs by providing drugs.
- Essential obstetric care by providing drugs and PHN/Staff Nurse at PHCs.
- Additional ANM at sub-centres in the weak districts for ensuring MCH care.
- Improved delivery services and emergency care by providing equipment kits. IUD insertions and ANM kits at sub-centres.
- Facility of referral transport for pregnant women during emergency to the nearest referral centre through Panchayat in weak districts.

a Enhanced community participation through Panchayats, Women's Groups and NGOs.

u Adolescent health and reproductive hygiene.

o Interventions in selected States/Distts.

- Screening and treatment of RTI/STD at sub-divisional level.
- Emergency obstetric care at selected FRUs by providing drugs.

Essential obstetric care by providing drugs and PHN/Staff Nurse at PHCs.

- Additional ANM at sub-centres in the weak districts for ensuring MCH care.
- Improved delivery services and emergency care by providing equipment kits, IUD insertions and ANM kits at sub-centres.

Facility of referral transport for pregnant women during emergency to the nearest referral centre through Panchayat in weak districts.

- Enhanced community participation through Panchayats, Women's Groups and NGOs.
- Adolescent health and reproductive hygiene.

o **Interventions in** selected States/Distts.

- Screening and treatment of RTI/STD at sub-divisional level.

Emergency obstetric care at selected FRUs by providing drugs.

- Essential obstetric care by providing drugs and PHN/Staff Nurse at PHCs.
- Additional ANM at sub-centres in the weak districts for ensuring MCH care.

◦ Improved delivery services and emergency care by providing equipment kits, IUD insertions and ANM kits at sub-centres.

Facility of referral transport for pregnant women during emergency to the nearest referral centre through Panchayat in

weak districts.

215. IMNCI target group -

a) Upto 5yrs

b) **Upto** 10 yrs

c) Upto 15 yrs

d) Upto 20 yrs

Correct Answer - A
Ans. is 'a' i.e., Upto 5 years

216. ASHA gets remuneration on all except ?

a) Institutional delivery

b) Zero dose of OPV and BCG

c) Recording birth weight

d) Birth registration

Correct Answer - B
Ans. is 'b' i.e., Zero dose of OPV and BCG

217. Indira Gandhi Matritva Sahyog Yojana is for ?

a) > 65 years old

b) > 50 years old

c) > 30 years old

d) > 19 years old

Correct Answer - D
Ans. is d i.e., > 19 years old
o The Indira Gandhi Matritva Sahyog Yojana (IGMSY) is a flagship program of the government of India introduced in 2010 under the *Ministry of Women and Child Development.*
o It is *a conditional cash transfer scheme* that targets *pregnant and lactating women 19 years of age and older who have two children.* Its goal is to partly compensate them for wage-loss during childbirth and childcare and to provide conditions for sale delivery and good nutrition and feeding practices.

218. Under National Cancer control Programme, oncology wings were sanctioned to -

a) Regional Cancer institutes

b) District Hospitals

c) Medical college Hospitals

d) Voluntary Agenecies treating cancer patients

Correct Answer - C
Ans. is 'c' i.e., Medical college Hospital
o Government hospital and government medical colleges are provided with a grant of Rs 3.00 crores for the development of oncology wing.

219. What is the BMI for an obese person:

a) Less than 18.5

b) 18.5-24.9

c) 25-29.9

d) More than 30

Correct Answer - D
Ans. D: More than 30
BMI is an estimate of total body fat mass and is probably the most useful scale to define obesity. Obesity has been defined as a BMI >30.0 kg/m2 in the World Health Organization (WHO) classification Body mass index (BMI), calculated from measured weight and height, was classified using the World Health Organization categories of underweight (BMI < 18.5 kg/m2), normal weight (BMI 18.5 to 24.9 kg/m2), pre-obesity (BMI 25 to 29.9 kg/m2) and obesity (BMI 30+ kg/m2)

220. True for epidemiological t*riad*

a) Time, place, person

b) Agent, host, environment

c) Disease, prevention, treatment

d) Agent, man, disease

Correct Answer - B
Ans: B i.e. Agent, host, environment
Epidemiological triad
The occurrence and manifestations of any disease, whether communicable or noncommunicable, are determined by the interaction of the following three factors.
1. The agent
2. The host
3. The environment

These three factors together constitute the epidemiological triad. Mere presence of these factors does not cause disease, the interaction of these three is required for the causation of a disease.

221. BCG vaccine is diluted with:
September 2005

a) Normal saline

b) Distilled water

c) Dextrose

d) Colloids

Correct Answer - A
Ans. A: Normal saline
BCG Vaccine (Freeze-Dried) for intracutaneous administration, as prepared by Connaught Laboratories Limited, is made from a culture of an attenuated strain of living bovine tubercle bacillus (Bacillus Calmette-Guerin).
It is supplied as a freeze-dried product ready for immediate use following reconstitution with the accompanying diluent, which consists of sterile phosphate-buffered normal saline.
Distilled water may cause irritation.

222. Measles is infective for:
March 2009

a) One day before and 4 days after rash

b) Four days before and five days after rash

c) Entire incubation period

d) Only during scabs falling

Correct Answer - B
Ans. B: Four days before and five days after rash
Measles/English Measles is spread through respiration (contact with fluids from an infected person's nose and mouth, either directly or through aerosol transmission), and is highly contagious — 90% of people without immunity sharing a house with an infected person will catch it.
The infection has an average incubation period of 14 days (range 6-19 days) and Period of communicability in measles is approximately 4 days before and 5 days after the appearance of the rash.
Measles is an infection of the respiratory system caused by a virus, specifically a paramyxovirus of the genus Morbillivirus.
Morbilliviruses, like other paramyxoviruses, are enveloped, single-stranded, negative-sense RNA viruses. Symptoms include fever, cough, runny nose, red eyes and a generalized, maculopapular, erythematous rash.

223. Denominator for calculating perinatal mortality rate is:
September 2009

a) 1000 births

b) 1000 live births

c) 1000 still births

d) 1000 population

Correct Answer - B
Ans. B: 1000 live births
164. Perinatal mortality, defined as number of stillbirths (28 weeks of gestation and more) and deaths in the first week of life (early neonatal deaths) per 1,000 live births, is a useful additional indicator, and work is ongoing to improve estimates of stillbirth rates, a major component of perinatal mortality.

224. Richest source of vitamin D is:
September 2003

a) Fish

b) Soyabean

c) Halibut liver oil

d) Vegetables

Correct Answer - C
Ans. C i.e. Halibut liver

225. Differences between human milk and cow milk are all of the following except: *September 2005*

a) Cow milk has comparatively more fat

b) Cow milk has comparatively more protein

c) Cow milk has comparatively more calcium

d) Cow milk is iron deficient

Correct Answer - D

Ans. D: Cow milk is iron deficient

Cow milk has comparatively more energy, fat, protein, minerals, iron and calcium Human milk has comparatively more of lactose and vitamin C but is deficient of iron.

226. Amount of proteins in human milk (in gms):
September 2007

a) 1.1

b) 2.2

c) 3.3

d) 4.4

Correct Answer - A
Ans. A: 1.1
Each 100 grams of breast milk yields approximately:

- 65 Kilocalories
- 88 g water
- 7.4 g carbohydrates (primarily lactose)
- 3.4 g fat
- 1.1 g protein

227. Vitamin K is required for:
March 2005

a) Chelation

b) Transamination

c) Carboxylation

d) None of the above

Correct Answer - C
Ans. C: Carboxylation
The function of vitamin K in the cell is to convert glutamate in proteins to gamma-carboxyglutamate (gla). Within the cell, vitamin K undergoes electron reduction to a reduced form of vitamin K (called vitamin K hydroquinone) by the enzyme vitamin K epoxide reductase (or VKOR).
Another enzyme then oxidizes vitamin K hydroquinone to allow carboxylation of Glutamate to gamma carboxyglutamate; this enzyme is called the gamma-glutamyl carboxylase or the vitamin K-dependent carboxylase.
The carboxylation reaction will only proceed if the carboxylase enzyme is able to oxidize vitamin K hydroquinone to vitamin K epoxide at the same time; the carboxylation and epoxidation reactions are said to be coupled reactions.

228. All are true for ASHA worker EXCEPT: *March 2013*

a) Informs about birth and deaths in her village to PHC

b) Education atleast till 4th class or higher

c) Local resident

d) Works per 1000 people of an area

Correct Answer - B

Ans. B i.e. Education atleast till 4th class or higher

ASHA/Accredited Social Health Activists (ASHAs)

- ASHAs must primarily be female residents of the village that they have been selected to serve, who are likely to remain in that village for the foreseeable future.
- Married, widowed or divorced women are preferred over women who have yet to marry since Indian cultural norms dictate that upon marriage a woman leaves her village and migrates to that of her husband.
- ASHAs must have class eight education or higher, preferably be between the ages of 25 and 45, and are selected by and accountable to the gram panchayat (local government).

229. A continuous quantitative data can be depicted with the help of:
September 2009

a) Bar diagram

b) Pie chart

c) Histogram

d) Pictogram

Correct Answer - C
Ans. C: Histogram
Numerical data/quantitative data is data measured or identified on a numerical scale.
Numerical data can be analyzed using statistical methods, and results can be displayed using tables, charts, histograms and graphs.
For example, a researcher will ask a questions to a participant that include words how often, how many or percentage. The answers from the questions will be numerical.
Examples of quantitative data would be: 'there are 643 dots on the ceiling' or 'there are 735 pieces of bubble gum'. or 'there are 8 planets in the solar system'

230. Group of 4-8 experts talking in front of a large group of audience is known as:

September 2011

a) Symposium

b) Workshop

c) Seminar

d) Panel discussion

Correct Answer - D
Ans. D: Panel Discussion
In a panel discussion, 4-8 persons who are qualified to talk about the topic sit and discuss a given problem, or the topic, in front of a large group of audience

Panel Discussion

- A panel consists of a small group of four or eight persons, who carry on a guided and informal discussion before an audience as if the panel were meeting alone.

The proceedings of the panel should be the same as those described for informal discussion: volunteering of facts, asking questions, stating opinions-all expressed with geniality, with respect for the contributions of other members, without speech making, and without making invidious personal references.
This primary function should occupy approximately two-thirds of the allotted time-say forty minutes of an hour's meeting.
The secondary function of the panel is to answer questions from the audience.
This discussion method is suitable for use when a relatively large

audience is anticipated.

- The disadvantage of the method is that it confines most of the discussion to the panel itself.
- The audience listens and is given a chance to ask questions, but for the most part is passive and receptive.
- Panel discussions, if well conducted, are usually more interesting to the audience than is the single-speaker forum.
- They provide sufficiently varied clash of opinion and presentation of facts to give even the quiet members of the audience a feeling of vicarious participation.
- Quality and tasks of leadership in panel discussion are similar to those described for informal discussion.
- The leader must in addition take special care to select panel members who can think and speak effectively.
- He must also be sure that they prepare themselves to discuss the subject.
- During the discussion by the panel the leader has substantially the same duties as in informal discussion except that he should keep himself more in the background as chairman of the panel.
- He can do so because each member of the panel is in reality an assistant to the leader and is responsible for specific contributions to the proceedings.
- When the subject is thrown open to the house, it is the leader's job to recognize appropriate questions and to reject those not bearing on the subject or involving personalities.
- Some questions he may answer himself, but usually he should repeat the question and call upon one of the panel to answer it.
- By preliminary announcement the leader may also tell the audience that they may direct questions at particular members of the panel if they choose.

  In any case, during the question period the leader needs to maintain strict control.On many occasions this may be the toughest part of his assignment to carry off efficiently and with good humor.
- While it is customary to confine audience questions to a specific period, some leaders permit questions from the floor at any time.
- Unless very carefully limited by the leader, this practice may interfere with effective discussion by the panel.

Arranging the panel properly will lend effectiveness to this form of

discussion.The members should face the audience.It is important that each panel member adjust his chair so that he can see every other member without effort the chairman will also find that the best places for his readiest speakers are at the extreme ends of the table.He should keep the more reticent members close to, him so that he can readily draw them out with direct questions.
If the quieter ones sit on the fringes of the panel, the more voluble members are quite likely to monopolize the discussion.

231. Preobesity is defined as a BMI of:

a) 18.5-24.9

b) 25-29.9

c) 35-39.9

d) 40-44.9

Correct Answer - B
Ans. B: 25-29.9
BMI is an estimate of total body fat mass and is probably the most useful scale to define obesity. Obesity has been defined as a BMI >30.0 kg/m2 in the World Health Organization (WHO) classification Body mass index (BMI), calculated from measured weight and height, was classified using the World Health Organization categories of underweight (BMI < 18.5 kg/m2), normal weight (BMI 18.5 to 24.9 kg/m2), pre-obesity (BMI 25 to 29.9 kg/m2) and obesity (BMI 30+ kg/m2)

232. Which of the following is Amphixenoses ?

a) Anthrax

b) Rabies

c) Trypanosoma cruzi

d) Salmonella

Correct Answer - C
Ans. is 'C' i.e., Trypanosoma cruzi
Zoonoses
Zoonoses are diseases and infections which are naturally transmitted between vertebrate animal and man.
The zoonoses may be classified according to the direction of transmission of disease :
1. Anthropozoonoses
- Infection is transmitted to man from lower vertebrate animals.
- Examples → *Rabies, plague, hydatid disease, anthrax, trichinosis.*

2. Zoonthroponoses
- Infection is transmitted from man to lower vertebrate animals
- Examples → *Human tuberculosis in cattle*

3. Amphixenoses
- Infection is maintained in both man and lower vertebrate animals that may be transmitted in either direction.
- Examples → T *cruzi, S. japonicum.*

233. Health index characteristics are all except ?

a) Validity

b) Reliability

c) Affordability

d) Feasibility

Correct Answer - C

Ans. is 'c' i.e., Affordability

There has been some confusion over terminology: health indicator as compared to health index (plural: indices or indexes).

It has been suggested that in relation to health trends, the term indicator is to be preferred to index, whereas health index is generally considered to be an amalgamation of health indicators (56).

Characteristics of indicators

Indicators have been given scientific respectability: for example ideal indicators.

- Should be valid, i.e., they should actually measure what they are supposed to measure;
- Should be reliable and objective, i.e., the answers should be the same if measured by different people in similar circumstances.
- Should be sensitive, i.e., they should be sensitive to changes in the situation concerned.
- Should be specific, i.e., they should reflect changes only in the situation concerned,
- Should be feasible, i.e., they should have the ability to obtain data needed, and;
- Should be relevant, i.e., they should contribute to the understanding

of the phenomenon of interest.

234. Screening is a type of ?

a) Primordial prevention

b) Secondary prevention

c) Primary prevention

d) Tertiary prevention

Correct Answer - B
Ans. is 'b i.e., Secondary prevention
In secondary prevention, action halts the progress of a disease at its incipient stage and prevents complication.
Screening tests (e.g. - Pap smear), helps in diagnosis at early stage so that adequate treatment can halt disease progression and prevent complication.

235. Net reproduction rate is ?

a) Number of live births per 1000 mid-year population

b) Number of live birth per 1000 women of child bearing age

c) Number of daughters a newborn girl will have during life time

d) None of the above

Correct Answer - C

Ans. is 'c' i.e., Number of daughters a newborn girl will have during life time

Net reproduction rate

Net reproductive rate is defined as

"The no. of daughters a new born girl will bear during her lifetime assuming fixed age specific fertility and mortality rates"

- It is the only fertility related statistics which also takes mortality rates into consideration.
- NRR of one is equivalent to attaining approximately *the two child norms.*
- Goal of NRR=1 can be achieved only *if atleast 60%* of the eligible couples* are effectively practicing family planning.

236. Third generation IUCD ?

a) Mirena

b) Nova-T

c) Lippe's loop

d) CuT-200

Correct Answer - A
Ans. is 'a' i.e., Mirena

237. In positively skewed deviation ?

a) Mean = Median = Mode

b) Mean > Medians > Mode

c) Mode > Median > Mean

d) None of the above

Correct Answer - B
Ans. is 'b' i.e., Mean > Medians > Mode

238. Influenza pandemic is

a) Seasonal trend

b) Cyclical trend

c) Secular tred

d) None of the above

Correct Answer - B
Ans. is 'b' i.e., Cyclical trend
Diseases occurring in cycles spread over a short period show cyclical trends of time distribution.
- It is a type of periodic fluctuation.
- Examples:
-Influenza pandemic: every 7–10 years due to antigenic variations.
- Measles: every 2-3 years in the prevaccination era.
- Rubella: 6-9 years in the prevaccination era.
-Non-infectious conditions can also show cyclical trends.

239. Not true about population pyramid ?

a) India has broad base

b) India has narrow base

c) India has narrow apex

d) Developing countries have bulge in the center

Correct Answer - B
Ans. is 'b' i.e., India has narrow base
In countries with high birth rates as ours, population pyramid is broad based conical (narrow apex) because of high birth rate and tapering of population with increase in age.
The pyramid of developing country (e.g. India) has a broad base and a tapering top.
In developed countries, the pyramid generally shows a bulge in the middle and has a narrower base (as in figure given in the question).

240. In malaria control, insecticide used for insectiside treated bed nets (ITBN)-

a) Deltamethrin

b) Malathion

c) Lindone

d) Fenitrothion

Correct Answer - A
Ans. is 'a' i.e., Deltamethrin
Insecticide Treated Bed Nets (ITBN) Programme (esp. deltamethrin) has resulted in significant decline in malaria incidence and API
.. Average decline in anopheline mosquito density - 68%
2. Average decline in cuicine mosquito density - 50%
3. Chemicals used in ITBN Programme : Synthetic pyretheroids
Deltamethrin : 2.5% in dosage of 25 mg/m2
.. Cyfluthrin: 5% in dosage of 50 mg/m2
2. Other insecticides used : Permethrin, Lambdacyhalothrin, Etofenprox, Cypermethrin
- Effectiveness of pyrethroids: For 6-12 months (Retreatment every 6 months)
- Long-lasting insecticidal mosquito nets (LLINs) : Also use pyrethroid insecticides, and a chemical binder that allows the nets to be washed > 20 times, allowing use for > 3 years.

241. Kanawati index is used for ?

a) Air population

b) PEM

c) Obesity definition

d) Infectivity

Correct Answer - B
Ans. is 'b' i.e., PEM
Kanawati index is used to classify protein energy malnutrition (PEM).

242. Gomez classification is based on ?

a) Weight retardation

b) Height retardation

c) Mid arm circumference

d) Stunting

Correct Answer - A
Ans. is 'a' i.e., Weight retardation

243. Human anatomical wastes are treated/disposed by ?

a) Autoclaving

b) Chemical disinfection

c) Incineration

d) Microwaving

Correct Answer - C
Ans. is 'c' i.e., Incineration
Human anatomical wastes such as human tissues, organs, and body parts are classified as Waste Category No. I They are disposed in 'plastic bags' with a 'yellow color code' and treated by 'Incineration or deep burial'.

244. Cytotoxic drugs are treated/disposed by ?

a) Autoclaving

b) Chemical disinfection

c) Incineration

d) Microwaving

Correct Answer - C
Ans. is 'c' i.e., Incineration
Cytotoxic drugs are category No. 5 wastes which are destroyed by incineration and disposed by secured landfills.

245. In calendar method of contraception, first day of fertile period is?

a) 10th day of shortest menstural cycle

b) 18th day of shortest menstural cycle

c) 10th day of longest menstural cycle

d) 18th day of longest menstural cycle

Correct Answer - A

Ans. is 'a' i.e. 10th day of shortest menstural cycle

Safe Period (rhythm method)

- This is also known as the *calendar method* first described by Ogino.
- The method is based upon the fact that ovulation occurs from 12 to 16 days before the onset of mensturation.
- Calculation is as follows :
- *The shortest cycle minus 18 days gives the first day of the fertile period.*
- *The longest cycle minus 10 days gives the last day of fertile period.*
- For example, if a woman's menstural cycle varies from 28-31 days, the fertile period during which she should not have intercourse would be from the 10th day to 21st day of the menstural cycle, counting day one as the first day of the menstural period. Thus, the 1st day of fertile period is 10th day of shortest cycle.

246. Most common type of polio is ?

a) Non-paralytic polio

b) Paralytic polio

c) Abortive illness

d) Inapparent infection

Correct Answer - D
Ans. is `d' i.e., Inapparent infection

247. Mortality of rabies is ?

a) 25%

b) 50%

c) 75%

d) 100%

Correct Answer - D
Ans. is 'd' i.e., 100%
Rabies
Rabies is primarily a zoonotic disease of warm-blooded animals, particularly carnivorous such as dogs, Cats, Jackals and wolves.

248. Kala-azar is transmitted by ?

a) Reduvid bug

b) Sandfly

c) Tsetse fly

d) Mosquito

Correct Answer - B
Ans. is 'b' i.e., Sandfly

249. Fluoride helps in ?

a) Vision

b) Dentition

c) Myelination

d) Joint stability

Correct Answer - B
Ans. is 'b' i.e., Dentition

250. Cholera vaccination is indicated ?

a) To control epidemics

b) For travellers

c) In endemic areas

d) In Neonates

Correct Answer - C
Ans. is 'c' i.e., In endemic areas
Cholera vaccination should be considered in areas where cholera is endemic.
However, it should always be done in conjunction with implementation of safe water, sanitation and hygiene promotion programme.
In resource poor areas, vaccination should be targeted at children aged 2 years.
Cholera vaccine *has not been recommended in outbreak/epidemic settings* or complex humanitarian emergencies because of the logistical challanges of administering 2-dose vaccine, and concern that long-scale vaccination would divert limited resources from higher priority measures.
As it does not prevent epidemic cholera transmission, it is not recommended for general population.
Cholera transmission is not recommended for travelers, as counseling about risk avoidance is more cost effective than vaccination.

251. Screening is not recommended if ?

a) Prevalence of disease is high

b) Life expectancy can be prolonged by early diagnosis

c) Diagnostic test should be available

d) Diseases with no latent period

Correct Answer - D

Ans. is 'd' i.e., Disease with no latent period

The disease to be screened should fulfil the following criteria before it is considered suitable for screening:?

1. The condition sougth should be an important health problem (in general, prevalence should be high).
2. There should be a recognizable latent or early asymptomatic stage.
3. The natural history of the contition, including development from latent to declared disease, should be adequately understood (so that we can know at what stage the process ceases to be reversible).
4. There is a test that can detect the disease prior to the onset of signs and symptoms.
5. Facilities should be available for confirmation of the diagnosis.
6. There is an effective treatment.
7. There should be an agreed-on policy concerning whom to treat as patients (e.g., lower ranges of blood pressure; border-line diabetes).
8. There is good evidence that early detection and treatment reduces morbidity and mortality.
9. The expected benefits (e.g., the number of lives saved) of early detection exceed the risks and costs.

252. To determine the endemicity of hepatitis B, what should be measured ?

a) HBsAg

b) HBcAg

c) HBeAg

d) Anti-HBeAg

Correct Answer - A

Ans. is 'a' i.e., HBsAg

HBsAg testing is widely used as a marker of HBV infection in epidemiological surveys.

Serological markers for HBV

Serological markers for HBV infection are *:?*

- *HBs Ag (surface antigen or Australia antigen) :* It *is* the *first marker which appears in the serum.* It is the epidemiological marker for HBV infection.
- *HBc Ag (core antigen) :* It is *not demonstrable* in serum because it is enclosed by HBsAg coat.
- *HBe Ag (envelope antigen) :* It is marker of *active replication and high infectivity.* It is qualitative marker of replication. HBs Ag carrier mothers who are HBe Ag positive almost invariably (> 90%) transmit hepatitis B infection to their offspring, where as HBs Ag carrier mothers with anti HBe rarely (10 to 15%) infect their offspring.
- *Anti-HBc Ag :* It is the first antibody appears in serum. *IgM anti-HBc Ag is a marker of acute or recent infection.* IgG anti-HBc Ag indicates remote infection.
- *Anti-HBs Ag :* It is *protective antibody.* It is the *only serological marker present after vaccination. After an infection, its presence indicates recovery and end of period of communicability.*

- *Anti-HBe Ag :* Its presence indicate stopage of replication and low infectivity.
- *HBV DNA :* It is *quantitative marker* of HBV replication.

253. An epidemiologist visits a village and wants to collect data for recent parasitic activity. What should be measure ?

a) Spleen rate

b) Infant parasite rate

c) Slide positivity rate

d) Slide falciparum rate

Correct Answer - B

Ans. is 'b' i.e., Infant parasite rate

MEASUREMENT OF MALARIA

- In the *pre-eradication era,* the magnitude of the malaria problem in a country used to be determined mostly from the reports of the *clinically diagnosed malaria cases* and the classical malariometric measures, e.g., spleen rate, parasite rate etc.
- On the other hand, during eradication era, the *microscopic diagnosis* of malaria cases became the main method of diagnosis and the parameters used are mostly parasitological in nature e.g., API, ABER, SPR and SFR.

Measurements of malaria in the pre eradication era

a) Spleen rate:

- *Defined as the percentage of children between 2 & 10 years of age showing enlargement of spleen. Spleen rate is widely used for measuring the endemicity of malaria in a community.*

b) Av. enlarged spleen :

- *A refinement of spleen rate , denoting the average size of spleen.*

c) Parasite rate :

- *Defined as on the percentage of children between the ages of 2 &*

10 yrs showing malarial parsites in their blood films.

d) Parasite density index :

- *Average degree of parasitimia*

e) Infant parasite rate

- *Percentage of infants showing malarial parasites in their blood films. It is the most sensitive index of recent transmission of malaria in a locality. If the infant parasite rate is zero for three consecutive years in a locality, it is regarded as absence of malaria transmission even though, the Anopheline vectors responsible for previous transmissions may remain.*

Eradication Era

a) Annual Parasite Incidence (API)*

= (Confirmed cases during one year / population under surveillance) x 1000

b) Annual Blood Examination Rate = (No. of slides examined/population) x 100

- *ABER is an index of operational efficiency.*
- *In the modified plan of operation, the minimum prescribed is 10 percent of the population in a year*

c) Annual falciparum index

d) Slide positivity rate

- Slide positivity rate is the percentage of slides found positive for malarial parasite, irrespective of the type of species.

Slide falciparum rate

- It is the percentage of slides positive for P. falciparum.

254. Recommended daily dietary requirment of folate (folic acid) in children ?

a) 80-120 µg

b) 200 µg

c) 400 µg

d) 600 µg

Correct Answer - A

Ans. is 'a' i.e., 80-120 µg

- Recommended daily allowances of folic acid are:-

a. *Healthy adults → 200 micro gm.(mcg)*
b. *Pregnancy → 500 mcg*
c. *Lactation → 300 mcg*
d. *Children → 80-120 mcg*

255. Minimum number of ANC visits required as per 2010 MOHFW (Ministry of Health and Family Welfare) guidelines ?

a) 1

b) 2

c) 3

d) 4

Correct Answer - D
Ans. is 'd' i.e., 4
Now, at least 4 antenatal visits, during pregnancy, are recommended.

256. WHO defines adolescent age between ?

a) 10-19 years of age

b) 10-14 years of age

c) 10-25 years of age

d) 9-14 years of age

Correct Answer - A
Ans. is 'a' i.e., 10 - 19 Years of age

257. All are true about DOTS, except ?

a) Short course of chemotherapy

b) Drugs are given free of cost

c) Supervised drugs intake in intensive phase

d) Daily treatment is recommended

Correct Answer - D

Ans. is 'd' i.e., Daily treatment is recommended

<u>Directly observed treatment short course (DOTS)</u>

- In the Revised National Tuberculosis Control Programme (RNTCP), patients are provided short course chemotherapy as *DOTS.*
- All patients are provided short-course chemotherapy *free of charge.*
- During the *intensive phase* of treatment *a health worker watches* as the patient swallows the drug in his presence. o During *continuation phase,* the patient is issued medicine *for one week* in a multiblister combipack of which the first dose is swallowed by the patient in the presence of health worker.
- The consumption of medicine in the continuation phase is also checked by return of empty multiblister combipack when the patient comes to collect medicine for the next week.
- In this programme, *alternate day treatment* is given.
- Under RNTCP, active case finding is no longer pursued. Case finding is passive. Patients presenting themselves with symptoms suspicious of tuberculosis are treated with DOTS therapy.
- The colour of boxes (containing the drugs for full course of treatment) is according to the category of regimen?

i. Category I patients → Red
i. Category II patients → Blue
i. Category III patients → Green

258. India causing maximum death ?

a) Drowning

b) Road traffic accident

c) Burns

d) Poisoning

Correct Answer - B
Ans. is 'b' i.e., Road traffic accident
Among the accidental deaths, maximum deaths are caused by traffic accidents, followed by drowning (2nd m.c. cause) and poisoning (3rd m.c. cause).

259. Hepatitis A vaccine available ?

a) Live attenuated

b) Killed (Inactivated)

c) Both live and inactivated

d) Subunit vaccine

Correct Answer - C
Ans. is 'c' i.e., Both live and inactivated
Two types of hepatitis A vaccines are used :-
1. *Formaldehyde inactivated vaccine*
2. *Live attenuated vaccine*

260. Extra energy, needed per day during pregnancy?

a) 150 Kcal

b) 200 Kcal

c) 300 Kcal

d) 350 Kcal

Correct Answer - D
Ans. is 'd' i.e., 350 Kcal

261. Vagabond disease is transmitted by ?

a) Louse

b) Mite

c) Tick

d) Black Fly

Correct Answer - A
Ans. is 'a' i.e., Louse
Vagabond's disease is pediculosis corporis, caused by *body louse.*

262. Recommended content of Iodine in salt at production level ?

a) 10 ppm

b) 15 ppm

c) 20 ppm

d) 30 ppm

Correct Answer - D

Ans. is 'd' i.e., 30 ppm

Goitre control

- There are following essential components of national goitre control programme.

1. **Iodized salt**

- *The iodization of salt is now the most widely used prophylactic public health measure against endemic goitre.*
- In India the level of iodization is fixed under the Prevention of food adulteration (PFA) act and is *not less than 30 ppm at the production point and not less than 15 ppm of iodine at the consumer level.*
- Iodized salt is most economical, convenient and effective means of mass prophylaxis in endemic areas.
- Recently the National institure of Nutrition at Hyderabad has come out with a new product, *common salt fortified with iron and iodine — > two in one salt (twin fortified salt or double fortified salt).*
- *Iodized oil* --> It is another effective method for controlling goitre. IM injection of iodized oil *(mostly poppy seed oil)* is given. An average dose of 1 ml will *provide protection for 4 years.*

2. **Iodine monitoring**

- Neonatal hypothyroidism is a sensitive pointer to environmental iodine deficiency and can thus be an effective indicator for

monitoring the impact of a programme.

3. Manpower training

4. Mass communication

"The WHO regional strategy for the control of IDD has its principal objective the reduction of prevalence of goitre in areas of endemicity to 10% or below by the year 2000".

263. False about transmission of Rubella ?

a) Droplet infection

b) Vertical transmission

c) Infection in early pregnancy causes milder disease

d) Fetus affected in late pregnancy may have only deafness

Correct Answer - C
Ans. is 'c' i.e., Infection in early pregnancy causes milder disease

264. Interval between primary and secondary cases ?

a) Latent period

b) Communicable period

c) Serial interval

d) Generation time

Correct Answer - C

Ans. is 'c' i.e., Serial interval

Latent period, serial interval and generation time, all are approximate measure of incubation period, i.e., these period can give some idea about incubation period.

Latent period

- *The period from disease initiation to disease detection.*
- It is used in non-infectious disease as the equivalent of incubation period in infectious disease.

Serial interval

- *The gap time between onset of primary case and secondary case.*
- By collecting information about a whole series of such onset, we get a distribution of secondary cases from which we can guess the incubation period.

Generation time

- *Interval between receipt of infecton by host and maximal infectivity of the host.*
- Generation time is roughly equal to the incubation period.

About option 'b'

Communicable period

- *The time during which an infectious agent may be transferred directly or indirectly from an infected person to another person.*

- The period of communicability has no relation with incubation period, it merely reflects the duration when the infectious agent may be transferred. This may occur during incubation period, during actual illness or during convalsescence.
- Generally communicable diseaes are not communicable in incubation period except - measles, Chicken pox, Pertussis hepatitis A, i.e., these diseases are communicable during their late incubation period.

265. Best way to dispose e-waste is?

a) Burning

b) Incineration

c) In a landfill

d) Recycling

Correct Answer - D

Ans. is 'd' i.e., Recycling

<u>E-Waste</u>

- E-waste is a popular, informal name for electronic products nearing the end of their "useful life.
- "E-wastes are considered dangerous, as certain components of some electronics products contain materials that are hazardous, depending on their condition and density.
- The hazardous content of these materials pose a threat to human health and environment.
- Discarded computers, television, VCRs, stereos, copiers, fax machines, electric lamps, cell phones, audio equiopment and batteries if improperly disposed can leach lead and other substances into soil and groundwater.
- Many of these products can be reused, refurbished, or recycled, or recyled in an environmentally sound manner so that they are less harmful to the ecosystem.
- Managment of E-Waste
- In industries management of e-waste should begin at the point of generation. This can be done by waste minimization techniques and by sustainable product design. Waste minimization in industries involves adopting:

.. inventory management,

2. production-process modification,
3. volume reduction,
4. *recovery and reuse*

Inventory management

- Proper control over the materials used in the manufacturing process is an important way to reduce waste generation.
- By reducing both the quantity of hazardous materials used in the process and the amount of excess raw materials in stock, the quantity of waste generated can be reduced.
- Developing review procedures for all material purchased is the first stop in establishing an inventory management program.
- Another inventory management procedure for waste reduction is to ensure that only the needed quantity of a material is ordered.

Production-process modification

- Changes cna be made in the production process, which will reduce waste generation.
- This reduction can be accomplished by changing the materials used to make the product or by the more efficient use of input materials in the production process or both.

Volume reduction

- Volume reduction includes those techniques that remove the hazardous portion of a waste from a non-hazardous portion.
- These techniques are usually to reduce the volume, and thus the cost of disposing of a waste material.

Recovery and reuse

- This technique could eliminate waste disposal costs, reduce raw material costs and provide income from a salable waste.
- Waste can be recovered on-site, or at an off-site recovery facility, or through inter industry exchange.

266. Vector for transmission of sleeping sickness ?

a) Sandfly

b) Black fly

c) Tse-tse fly

d) Hard tick

Correct Answer - C
Ans. is 'c' i.e., Tse-tse fly

267. Definition of relapse in TB ?

a) A patient who returns sputum positive after leaving treatment for at least 2 months.

b) A pateint who returns sputum positive which was cured by previous treatment

c) A patient who remains sputum positive after 5 months of treatment

d) None of the above

Correct Answer - B

Ans. is 'b' i.e., A pateint who returns sputum postive which was curved by previous treatment

Some definitions of tuberculosis cases and treatment

- *Case of tuberculosis :* A patient in whom tuberculosis has been confirmed by bacteriology or diagnosed by a clinician.
- *Sputum smear examination* - Laboratory technique to screen sputum for tuberculosis, where acid fast bacilli (AFB) are stained red by the Ziehl Neelsen method, and then identified and counted.
- using microscopy.
- *Smear positive tuberculosis* - At least one initial sputum smears positive for AFB or one AFB positive.
- *Smear negative tuberculosis* - At least two negative smears, but tuberculosis suggestive symptoms and X-ray abnormalities or positive culture.
- *Adherence* - Person takes appropriate drug regimen for required time (also known as compliance).
- *New case* - A patient with sputum positive pulmonary tuberculosis who has never had treatment for tuberculosis or has taken anti - tuberculosis drugs for less than 4 weeks.

- *Relapse* - A patient who returns smear positive having previously been treated for tuberculosis and declared cured after the completion of his treatment.
- *Failure case* - A patient who was initially smear positive, who began treatment and who remained or became mear positive again at five months or later during the course of treatment.
- *Return after default* - A patient who returns sputum smear positive, after having left treatment for at least two months.
- *Transfer in* - A patient recorded in another administrative area register and transferred into another area to continue treatment (treatment results should be reported to the district where the patient was initially registered). *Transfer out* - A patient who has been transferred to another area register and treatment results are not known. *Cured* - Initially smear positive patient who completed treatment and had negative smear result on at least two occasions (one at treatment completion).
- *Treatment completed* - Initially smear negative patient who received full course of treatment, or smear positive who completed treatment, with negative smear at the end of initial phase, but no or only one negative smear during continuation and none at treatment end.
- *Cohort* - A group of patients in whom TB has been diagnosed, and who were registered for treatment during a specified time period (e.g. the cohort of new smear-positive cases registered in the calender year 2003). This group forms the denominator for calculating treatment outcomes. The sum of the treatment outcomes, plus any case for which no outcome is recorded (eg. still on treatment) should equal the number of cases registered.
- *Case detection rate :* - The case detection rate is calculated as the number of notification of new and relapse cases in a year divided by the estimated incidence of such cases in the same year.

268. According to DOTS-PLUS guidelines 2013 treatment of multidrug resistance TB includes all except ?

a) Total duration 24-27 months

b) Intensive phase - 6 drugs

c) Continutation phase - 2 drugs

d) Intensive phase 6-9 months

Correct Answer - C

Ans. is 'c' i.e., Continutation phase-2 drgus

Treatment of multidrug resistance (MDR) TB

- MDR-TB is defined as resistance to at least both INH and rifampicin. Previously it was classified as Category IV under DOTS (DOTS-PLUS).
- The treatment is given in two phases, the intestive phase (IP) and the continuation phase (CP). *The total duration of treatment for regimen for MDR-TB is 24-27 months,* depending on the IP duration.

o Treatment regimen comprises :-

i. Intensive phase (6-9 months) : *Six drugs :* Kanamycin (Km), levofloxacin (Lvx), ethionamide (Eto), pyrazinamide (Z), ethambutol (E), and cycloserine (Cs).

i. Continuation phase (18 months) : *Four drugs :* Levofloxaxcin, ethionamide, ethambutol and cycloserine.

i. Total duration of treatment is 24-27 months.

Treatment of extensive drug resistance (XDR) TB

- XDR-TB is defined as *resistance to any fluoroquinolone* and *at least one of the following three second-line drugs (capreomycin, kanamycin, amikacin),* in addition to multidrug resistance.

- The Regimen for XDR-TB would be of 24-30 months duration, with 6-12 months Intensive Phase (IP) and 18 months Continuation Phase (CP).
- Regimen is :-

i. Intensive phase (6-12 months) : *Seven drugs :* Capreomycin, PAS, moxifloxacin, high dose INH, clofazimine, Linezolid, amoxyclay.

i. Continuation phase (18 months) : *Six drugs :* PAS, moxifloxacin, high dose INH, clofazimine, linezolid, amoxyclay.

269. Notifiable diseases to WHO are all except ?

a) Cholera

b) Plague

c) Yellow fever

d) Tuberculosis

Correct Answer - D
Ans. is 'd' i.e., Tuberculosis

270. Continuous scrutiny of health related factors is called ?

a) Isolation

b) Surveillancec

c) Monitoring

d) Quarntine

Correct Answer - B

Ans. is 'b' i.e., Surveillance

Monitoring

- Monitoring is *the performance and analysis of routine measurements aimed at detecting changes in the environment or health status of population,* e.g. monitoring of air pollution, water quality, and growth & nutritional status. Surveillance
- *Surveillance is the continuous scrutiny of the factors that determine the occurrence and distribution of disease and other conditions of ill health.*
- In simple words *"surveillance is systemic ongoing collection, collation and analysis of data and the timely dissemination of information to those who need to know so that action can be taken".*
- According to above definition, monitoring becomes one specific and essential part of the broader concept embraced by surveillance.
- Following example will help to differentiate these two ?

In tobacco control -

- *Surveillance* includes collection of data about prevalence of tobacco use, its health and enconomic consequences, its socio-cultural determinats and tobacco control policy responses and tobacco industry activities. By collecting all these information effective tobacco control interventions can be taken.

- *Monitoring* will continously oversight the activities of this tobacco control interventions, to ensure that they are proceeding according to plan. It keeps track of achievement, resources supply and utilization, staff movement, etc, so that if anything goes wrong, immediate corrective measure can be taken.

So,

1. In surveillance, data is collected & collated, and this information is used to know what action to be taken - making a plan of action.
2. Monitoring than keep a watch that this plan of action is working properly It is a part of continued surveillance.

"Surveillance is a systemic method for continuous monitoring of disease in a population, in order to be able to detect changes in disease patterns and then to control them". Epidemiology glossary

271. Natural history of disease is studied with ?

a) Longitudinal studies

b) Cross-sectional studies

c) Both

d) None

Correct Answer - A

Ans. is 'a' i.e., Longitudinal studies

Longitudinal studies

- In this type of study, observations are repeated in the same population over a prolonged period using *follow up examinations.*
- *They are useful to*

1. *Study the natural history of the disease*
2. *For identifying risk factors of disease*
3. *For finding out the incidence rate or rate of recurrence of new cases of the disease.*

Note: Longitudinal studies are difficult to organize and more time consuming than cross-sectional studies.

272. India belongs to which stage of the demographic cycle ?

a) Slow stationary

b) High stationary

c) Early stationary

d) Late expanding

Correct Answer - D
Ans. is 'd' i.e., Late expanding
Demographic process
Fertility
Mortality
Marriage
Migration
Social Mobility
Demographic cycle
Stage 1 : High stationary
High birth rate and high death rate render the population stationary.
Narrow demographic gap.
Stage 2 : Early expanding
Death rate declines and birth rate remains unchanged
The demographic gap starts increasing and then becomes maximum
Stage 3 : Late expanding
Death rate decline further and birth rate falls
India is in this stage, currently
The demographic gap starts declining
Stage 4 : Low stationary
Low birth rate and low death rate renders the population stationary
Narrow demographic gap

Stage 5 : Declining
Population begins to decline as birth rate is lower than death rate
The demographic gap is negative

273. RCH-II major strategies are all except ?

a) Essential obstetric care

b) Emergency obstetric care

c) Family planning

d) Strengthening referral system

Correct Answer - C

Ans. is 'c' i.e., Family planning

4 components of RCH programme are (i) Family planning; (ii) Child survival and safe motherhood; (iii) Client approach to health care, and (iv) Prevention of RTI/STD/AIDS.

Reproductive and Child health Programme

- RCH programme was launched in October 1997.
- Reproductive and child health approach has been defined as : -

1. People have the ability to reproduce and regulate their fertility.
2. Women are able to go through pregnancy and child birth safety.
3. The Outcome of pregnancies is successful in terms of maternal and infant survival and well being.

- Couples are able to have sexual relations free of fear of pregnancy and of contracting disease.
- RCH phase I programme incorporated the following components.

274. Disability adjusted life year (DALY) is a measure of ?

a) Life expectancy

b) Effectiveness of treatment

c) Quality of life

d) Human development

Correct Answer - B
Ans. is 'b' i.e., Effectiveness of treatment
Disability - adjusted life year (DALY)

DALY is a measure of :-

The burden of disease in a defined population
The effectiveness of interventions

It expresses years lost to premature death and years lived with disability adjusted for the severity of the disability.
That means, DALY measures both mortality and disability together (in contrast to sullivan's index which is related to disability only).
One DALY is one lost year of healthy life.
DALY combines following : -

Years of lost life (YLL).
Years lost to disability (YLD)
DALY = YLL + YLD

Japanese life expectancy statistics are used as a standard for

measuring premature death, as Japanese have the longest life expectancy.

Health - adjusted life expectancy (HALE)

HALE is the indicator used to measure healthy life expectancy.
HALE is based on the life expectancy at birth but includes an adjustment for time spent in poor health.
It is the equivalent number of years in full health that a newborn can expect to live based on current rates of ill health and mortality.

275. Which of the following is used to represent continuous (quantitative) data ?

a) Bar diagram

b) Pie chart

c) Histogram

d) Map diagram

Correct Answer - C
Ans. is `c' i.e., Histogram

276. Amino acid deficient in both Wheat and Maize ?

a) Lysine

b) Threonine

c) Tryptophan

d) Methionine

Correct Answer - A
Ans. is 'a' i.e., Lysine
Wheat

- Next to rice, wheat is the most important cereal.
- *The limiting amino acids in wheat proteins are lysine and threonine.*

277. Risk period for maximum fetal damage by congenital rubella ?

a) First trimester of pregnancy

b) Second trimester of pregnancy

c) Third trimester of pregnancy

d) Risk is same throughout the pregnancy

Correct Answer - A
Ans. is 'a' i.e., First trimester of pregnancy
In general, the earlier in pregnancy infection occurs, the greater the damage to the fetus. Maximum damage to the fetus occurs when infection is acquired in the first trimester of pregnancy.

278. Medical audit is done ?

a) To improve patients care

b) For doctor's benefit

c) For hospital staff management

d) For decreasing cost of treatment

Correct Answer - A
Ans. is 'a' i.e., To improve patients care
***Medical* audit**

- An objective and systematic way of evaluating the physicians performance is known "MEDICAL AUDIT"
- The Evaluation of the "PROCESS" of medical care is carried out by comparing with a pre-determined standard.
- Medical audit is the professional review of services provided by the hospital against given standard.
- *It is defined as the retrospective evaluation of quality of medical care through the scientific analysis of medical records.*
- Medical audit is an important component of quality assurance, which in turn is an essential part of any management process.

279. Post exposure prophylaxis is given in all except ?

a) Rabies

b) Chickenpox

c) Measles

d) Typhoid

Correct Answer - D

Ans. is 'd' i.e., Typhoid

Post-exposure immunization

Post exposure immunization is prophylactic immunization immediately after exposure to a pathogen, in order to prevent infection by the pathogen and the development of disease.

Post exposure immunization is given for -

i. *Varicella (chicken pox)*
i. *Measles*
i. *Rabies*
*. *Tetanus*
*. *Hepatitis*
i. *Meningococcal meningitis*

280. Good sources of vitamin 'C' are all except ?

a) Amala

b) Lime

c) Guava

d) Egg

Correct Answer - D
Ans. is 'd' i.e., Egg
***Vitamin* C**

- Also known as *ascorbic acid.*
- *It is the most sensitive of all vitamins to heat.*
- Man, monkey and guinea pigs are the perhaps the only species known to require vitamin 'C' in their diet.
- The richest source of vitamin C is *Indian goosebery (Amla).*
- Important sources of vitamin C in decreasing order : ?
- Amla > Guava > Cabbage > Amaranth > Lime > Cauliflower > Orange > Spinach > Tomato > Potato

281. The validity of a test denotes ?

a) Precision

b) Accuracy

c) Reproducibility

d) Reliability

Correct Answer - B

Ans. is 'b' i.e., Accuracy

Screening test to be applied

The screening test to be applied should fulfill the following important criteria before it is considered suitable for screening : -

1.Acceptability

- The test should be acceptable to the people at whom it is aimed.
- In general painful or embarrassing tests e.g., per rectal or vaginal examination are not likely to be acceptable.

2.Repeatability *(reliability)*

- Repeatability means the test must give consistent results when it is repeated more than once on the same individual under the same conditions.
- That means the results of the test are precise (exact), So repeatability is sometimes called precision, reliability or reproducibility.

3. *Validity (accuracy)*

- Validity refers to what extent the test accurately measures which is purports to measures.
- That means a valid test distinguish the people who have the disease from those who do not.
- Validity has components --> *Sensitivity and specificity.*

282. Maximum protein is found in ?

a) Egg

b) Soyabean

c) Rice

d) Wheat

Correct Answer - B
Ans. is 'b' i.e., Soyabean

283. STOP TB Strategy was lauched in ?

a) 2002

b) 2006

c) 2010

d) 2013

Correct Answer - B

Ans. is 'b' i.e., 2006

STOP TB Strategy

- In 2006, WHO launched the new Stop TB Strategy.
- The core of this strategy is DOTS.
- The strategy is to be implemented over the next 10 years as described in the Global Plan to Stop TB 2006-2015.
- The targets and indicators for TB control are as defined within the framework of MDGs.
- These will be used to measure the progress made under the stop TB strategy.
- It focuses onthe five principal indicators that are used to measure the implementation and impact of TB control.
- They are : case detection, treatment success, incidence, prevalence and deaths.
- The global targets for case detection and treatment success have been set by WHO's World Health Assembly.

i. By 2015: The global burden of TB (prevalence and death rates) will be reduced by 50% relative to 1990 levels. This means reducing prevalence to 150 per 100,000 or lower and deaths to 15 per 100,000 per year or lower by 2015 (including TB cases coinfected with HIV). The number of people dying from TB in 2015 should be less than approximately 1 million, including those coinfected with

HIV.

i. By 2050 : The global incidence of TB disease will be less than or equal to 1 case per million population per year.

284. One TB unit is recommended for how much population in Hilly areas ?

a) 50,000

b) 100,000

c) 150,000

d) 250,000

Correct Answer - D
Ans. is 'd' i.e., 250,000

285. Durkheim work was related to ?

a) Recommendation of multipurpose worker

b) Management in Health manpower

c) Division of labor

d) Integratation of medical and health services

Correct Answer - C
Ans. is 'c' i.e., Division of labor

- **Four major works of Durkheim are *:?***

1. *Division of Labor in society.*
2. Rules of sociological methods.
3. Suicide
4. Elementary forms of religious life.

286. AFP surveillance registry indicator is ?

a) Number of AFP cases reported

b) Number of wild polio-virus positive cases

c) Number of non-polio AFP < 5 years

d) Number of non-polio AFP < 15 years

Correct Answer - A
Ans. is 'a' i.e., Number of AFP cases reported
The number of AFP cases reported each year is used as an indicator of a country's ability to detect polio, even in countries where the disease no longer occurs.
Polio surveillance

- It is the most important part of whole polio eradication intiative. It has two components:?

Acute flaccid paralysis (AFP) surveillance
Acute flaccid paralysis is defined as *acute onset (< 4 weeks) of flaccid paralysis (reduced tone) without other obvious cause* in children *WHO recommends the immediate reporting and investigation of every case of AFP in children less than 15 years.*

287. The most common cause of blindness in India is ?

a) Cataract

b) Trachoma

c) Refractive errors

d) Vitamin A deficiency

Correct Answer - A
Ans. is 'a' i.e., Cataract

288. All are true about epidemiological features of cholera except ?

a) Epidemic is self limiting

b) Poor sanitation is a cause of epidemic

c) El Tor biotype has decreased endemicity

d) Onset of epidemic is abrupt

Correct Answer - C

The El Tor biotypes have greater endemic tendency than its classical counterpart in that it causes a higher infection-to-case ratio (i.e. more inapparent infections and mild cases).

About other options

- Cholera epidemic has an abrupt onset. It starts as *common source epidemic* and often treat an acute health problem. Then it continues as a *propagated epidemics* as cases become the source for the other persons.
- Cholera epidemic in a community is self-limiting. This is attributed to the acquisition of temporary immunity, as well as due to the occurrence of a large number of subclinical cases.
- Poor environmental sanitation is the most important predisposing factor for epidemic

289. Incidence is calculated by ?

a) Cross sectional study

b) Cohort study

c) Case control study

d) None

Correct Answer - B
Ans. is 'b' i.e., Cohort study

290. A problem village is one where ?

a) Source of water > 1·6 km away

b) Water available > 15 meters depth

c) Excess of fluoride in water

d) All of the above

Correct Answer - D

Ans. is `d' i.e., All of the above

A problem village has been defined as one

- *Where no source of safe water is available within a distance of 1.6 km, or*
- *Where water is available at a depth of more than 15 meters,* or
- *Where water source has excess salinity, iron, fluorides and other toxic elements, or*
- *Where water is exposed to the risk of cholera.*

291. Most common presentation of mumps ?

a) Pain and lacrimation of eye

b) Pain and swelling of parotid glands

c) Pain and swelling of submandibular and sublingual glands

d) Aseptic meningitis

Correct Answer - B
Ans. is 'b' i.e., Pain and swelling of parotid glands

292. Prevalence of Influenza in India ?

a) 10 per 10000 population

b) 10 per 100000 population

c) 10 per 1000 population

d) Data regarding prevalence of influenza is not adequate

Correct Answer - D
Ans. is 'd' i.e., Data regarding prevalence of influenza is not adequate

293. Billings method of contraception is based on ?

a) Change in temperature

b) Change in cervical mucus

c) Safe period (calendar method)

d) Coitus interruptus

Correct Answer - B
Ans. is 'b' i.e., Change in cervical mucus

Miscellaneous methods of contraceptions
These are (i) Abstinence, (ii) Coitus interruptus, (iii) Safe period (rhythm method), and (iv) Natural family planning methods.
Abstinence
There is complete abstinence from sexual intercourse. It is not used and can hardly be considered as a method of contraception to be advocated for the masses.
Coitus interruptus
It is the oldest method of voluntary fertility control. The male withdraws before ejaculation and thereby tries to prevent the deposition of semen into the vagina. The failure rate is very high at 25%.
Natural family planning methods
These are :?
Basal body temperature (BBT) method: It is based on the principle that there is a rise BBT at or just before ovulation.
Cervical mucus method (Billings method or ovulation method) : It is based on the observation that at the time of ovulation cervical mucus becomes watery clear resembling raw egg white, smooth, slippery

and profuse.
Symptothermic method: This method combines temperature, cervical mucus, and safe period (calendar method) methods.

294. In epidemics measles vaccine is to be given within how many days of exposure ?

a) 3 days

b) 7 days

c) 10 days

d) 15 days

Correct Answer - A
Ans. is 'a' i.e., 3 days
Incubation period of measles virus is 10 days.
Incubation period of live attenuated measles virus of live vaccine is 7 days.
Thus, if the vaccine is given within 2-3 days of exposure, the replication of vaccine virus takes preference over replication of wild virus.
"Susceptible contacts over the age of 9-12 months may be protected against measles with measles vaccine, provided that this is given within 3 days of exposure. This is because, the incubation period of measles induced by vaccine is about 7 days, compaired with 10 days for the naturally acquird measles." — Park

295. Yellow bag is used for -

a) Waste sharp

b) Cytotoxic drugs

c) Animal waste

d) Chemical waste

Correct Answer - C
Ans. is 'c' i.e., Animal waste

296. Isolation is not done in ?

a) Cholera

b) Diphtheria

c) Mumps

d) Hepatitis

Correct Answer - C:D
Ans. is (D) Hepatitis (C) Mumps
Isolation has a distinctive value in the control of some infectious diseases, e.g., diphtheria, cholera, streptococcal respiratory disease, pneumonic plague.
In some diseaes where there is a large component of subclinical infection and carrier state, even the most rigid isolation will not prevent the spread of disease, e.g., polio, hepatitis and typhoid fever.
Mumps is highly infectious before it is diagnosed hence isolation for most cases of mumps has proved futile - Park.
Measles is also highly infectious during prodromal period, isolation is most useful if diagnosis can be established in the prodromal/catarrhal stage. But most cases of measles are diagnosed with the appearance of rash when communicability begins to decline. Isolation in measles is therefore not likely to be very effective.

297. Association of Two variables explained by 3rd variable is ?

a) Spurious association

b) Indirect association

c) Direct association

d) Causal association

Correct Answer - B

Ans. is 'b' i.e., Indirect association

Association

- Descriptive studies help to suggest an aetiological hypothesis.
- Analytic and experimental studies test the hypothesis, derived from descriptive studies and confirm or refute the observed association between suspected causes and disease.
- Association may be defined as the *concurrence of two variables more often than would be expected by chance.*
- In other words, *events are said to be associated when they occur more frequently togeher than one would expect by chance.*

Association can be of following types : -

1 .Spurious association

- Observed association between a disease and suspected factor is spurious, i.e., not real.
- In other words there is an observed association when none actually exists.

2.Indirect association

- The indirect association is a statistical association between a variable of interest and a disease due to the presence of another factor, known or unknown, that is common to both the variable and

the disease.

- This third factor (i.e., the common factor) is also known as the confounding variable.
- For example, endemic goitre (disease) is found at high altitudes (variable), showing thereby an association between altitude and endemic goitre. But it is due to iodine deficiency which is common at high altitude. So, iodine deficiency acts as a confounding factor as it is associated with both high altitude and endemic goitre.

3.Direct (causal) association

a) *One to one causal relationship*

- Two variables are stated to be causally related if change in one is followed by change in other.
- If It does not, then their relationship cannot be causal.

b) *Multifactorial causation*

- The causal thinking is different in non-communicable disease (e.g., CHD) where the etiology *is* multifactorial, i.e., more than one factors are associated with disease causation.

298. Numerator in negative predictive value ?

a) True positive

b) False positive

c) True negative

d) False negative

Correct Answer - C
Ans. is 'c' i.e., True negative
specificity = True negatives/True negatives+False positives
Sensitivity=True Positives/True positives+False negatives
Positive predictive value = True positives/(true+false) positives
Negative predictive value = True negatives/(true+false) negatives

299. Stage of contraction of family starts at ?

a) Marriage

b) Birth of first child

c) Birth of last child

d) Leaving home of first child

Correct Answer - D
Ans. is `d' i.e., Leaving home of first child

300. Clinical audit means ?

a) Measuring hospital records

b) Measuring current patients care against explicit criteria

c) Measuring input-output analysis

d) Measuring shortest time needed to complete task

Correct Answer - B
Ans. is 'b' i.e., Measuring current patients care against explicit criteria
Clinical audit is a quality improving process, in which patients care is improved.
In this, *current patients outcome and outcomes are measured against explicit audit criteria (against reference standards).*

301. Nutrient which is lost maximum in polished rice?

a) Proteins

b) Thiamine

c) Ascorbic acid

d) Calcitriol

Correct Answer - B
Ans. is 'b' i.e., Thiamine
Effect of milling on rice
The milling process deprives the rice grain of its valuable nutritive elements

302. Zinc supplement given in 12 month baby -

a) lgm/day

b) 10 mg/day

c) 5 mg/day

d) 15 mg/day

Correct Answer - C
Ans. is 'c' i.e., 5 mg/day
The requirements for infants range between 3·5 - 5·0 mg/day.

303. Which line of death certificate represent major antecedent cause of death -

a) Ia

b) Ib

c) Ic

d) II

Correct Answer - C

Ans. is 'c' i.e., Ic

International death certificate

- The basis of mortality data is death certificate.
- For ensuring national and international comparability, it is necessary to have a uniform and standardized system of recording and classifying deaths.
- For this purpose *WHO* has recommended international death certificate.
- *Consist of four lines:*

1. *Line Ia:* Disease or condition directly leading to death
2. *Line Ib:* Antecedent/ underlying cause
3. *Line Ic: Main antecedent / underlying cause*
4. *Line II:* Other significant conditions contributing to death but not related to disease/ condition causing it

Example of a death certificate:

1. *Line Ia:* Renal failure
2. *Line Ib:* Diabetic nephropathy
3. *Line Ic:* Diabetes mellitus
4. *Line II:* Hypertension

- Concept of underlying cause, *Line Ic is the most important line in death certificate, thus also known as `Essence of Death Certificate'.*

304. Biological value of protein is

a) Increase in weight per unit protein consumed

b) Percentage of ingested protein retained inside the body

c) Percentage of absorbed nitrogen retained

d) Percentage of energy provided by a protein of food

Correct Answer - C

Ans. is 'c' i.e., Percentage of absorbed nitrogen retained

<u>Assessment of proteins</u>

Protein can be assessed qualitatively or quantitatively*:?*

1) Protein quantity

- It is assessed by the protein-energy *ratio.*

2) *Protein quality*

- It is assessed by *amino-acid score, biological value,* net protein utilization, protein efficiency ratio, and protein digestibility corrected amino acid score.

Protein energy Ratio (Protein-energy percentage)

- It is a *quantitative* measure for assessment of protein.
- It measures the percentage of energy that is provided by the protein in the food.

305. RDA of zinc in a child ?

a) 10 mg

b) 20 mg

c) 6-8 mg

d) 4-5 mg

Correct Answer - C
Ans. is 'c' i.e., 6-8 mg
RDA of Zinc in children

- 1 - 3 years —> 3mg
- 4 - 8 years -5 5 mg
- 9 years and above (male) —> 8 - 11 mg
- 9 years and above (female) --> 8 mg

306. Mental health programme was started in?

a) 1982

b) 1987

c) 1990

d) 1995

Correct Answer - A
Ans. is 'a' i.e., 1982
The Government of India has launched the National Mental Health Programme (NMHP) in 1982.
Also know
Mental health act was started in 1987.

307. Test used to assess quantitative observations before and after an intervention ?

a) Unpaired T-test

b) Paired T-test

c) Chi-square test

d) Fisher-T-test

Correct Answer - B
Ans. is 'b' i.e., Paired T-test
A paired t-test is used to compare two population means where you have two samples in which observations in one sample can be paired with observations in the other sample
this might occur in:
• Before-and-after observations on the same subjects (e.g. students' diagnostic test results before and after a particular module or course).
• A comparison of two different methods of measurement or two different treat
ments where the measurements/treatments are applied to the same subjects (e.g. blood pressure measurements using a stethoscope and a dynamap).
Paired test : Is applied to paired data, when each individual gives a pair of observations such as : when observations are made before and after the play of a factor e.g. pulse rate before and after a drug. Further, it proceeds similar to the unpaired test.

308. Virus not sensitive to disinfection by chlorination

a) Rotavirus

b) Norwalk virus

c) Poliovirus

d) None

Correct Answer - C

Ans. is 'c' i.e., Poliovirus

Chlorination

- Chlorination is one of the greatest advances in water purification.
- Chlorine kills pathogenic bacteria, but has *no effect on spores, certain viruses (e.g., polio, viral hepatitis) and cyst of E.histolytica, in usual doses.*

Mechanism of action

- When chlorine is added to water, there is the formation of hypochloric and hypochlorous acid
- The hypochloric acid is neutralized by the alkalinity of the water.
- The hypochlorous acid ionizes to form hydrogen ions and hypochlorite ions.
- *The disinfecting action of chlorine is mainly due to the hypochlorous acid and to a small extent due to the hypochlorite ions.*
- *The hypochlorous acid is the most effective form of chlorine for water disinfection, it is 70-80 times more effective than hypochlorite ion.*

309. Vaccine which should not be frozen -

a) OPV

b) Measles

c) HBV

d) Yellow fever

Correct Answer - C
Ans. is 'c' i.e., HBV
OPV and measles vaccines are stored in deep freezers. (Note : Yellow fever vaccine is also freez dried, but is not used in India).
Vaccine which must be stored in the cold part but never allowed to freez.

- Typhoid
- DPT
- TT
- Hepatitis B
- DT
- BCG
- Diluents

310. Koplik spot is pathognomic of which infection ?

a) Rubella

b) Influenza

c) Mumps

d) Measles

Correct Answer - D
Ans. is 'd' i.e., Measles

311. Spread of chicken pox is maximum ?

a) After formation of scab

b) Just before and after onset of rash

c) One week before onset of rash

d) During convelescence

Correct Answer - B
Ans. is 'b' i.e., Just before and after onset of rash
Communicable period (period of maximum infectivity) in chicken pox is 2 days before to 5 days after onset of rash.

312. Breast milk is deficient in which vitamin

a) Vitamin A

b) Vitamin B1

c) Vitamin K

d) Vitamin C

Correct Answer - C

Ans. is 'c' i.e., Vitamin K

- Exclusive breasfed infants may have following deficiencies -

1. Vit B_{12} (if mother is strict vegetarian)
2. Fluoride
3. Vit D
4. Vit K

"Breastfed infants are protected as the breastmilk contains adequate amounts of vitamin C, except when the mother is deficient in Vitamin C".

313. Percentage of women 15-24 years age group in India ?

a) 10%

b) 20%

c) 30%

d) 40%

Correct Answer - B
Ans. is 'b' i.e., 20%
In India percentage of women in 15-24 years age group.

314. Under MCH programme, adult IFA tablet contains ?

a) 100 mg elemental iron and 0·1 mg FA

b) 100 mg elemental iron and 0·5 mg FA

c) 20 mg elemental iron and 0·1 mg FA

d) 20 mg elemental iron and 0-5 mg FA

Correct Answer - B

Ans. is 'b' i.e., 100 mg elemental iron and 0·5 mg FA

- ***Iron and Folic Acid content per IFA tablet:***
- *Adult tablet:* 100 mg elemental iron and 500 mcg folic acid
- *Pediatric tablet:* 20 mg elemental iron and 100 mcg folic acid
- *For preterm infants, recommended Iron and Folic Acid content per IFA tablet:*
- *Pediatric tablet:* 10 — 15 mg elemental iron and 100 mcg folic acid.

315. Amplifier for Japanese encephalitis ?

a) Horse

b) Pigs

c) Dogs

d) Monkey

Correct Answer - B
Ans. is 'b' i.e., Pigs

316. IQ in mild mental retardation is

a) 50-70

b) 35-49

c) 20-34

d) < 20

Correct Answer - A
Ans. is 'a' i.e., 50-70

317. Most common type of mental retardation ?

a) Mild

b) Moderate

c) Severe

d) Profound

Correct Answer - A
Ans. is 'a' i.e., Mild

318. Disease associated with excessive maize diet ?

a) Wernicke's encephalopathy

b) Pellagra

c) Beri-Beri

d) Scurvy

Correct Answer - B
Ans. is 'b' i.e., Pellagra
Excess of Leucine interferes in conversion of Tryptophan into Niacin, and aggravates the pallagrogenic action of maize.
Similar to maize, *Jowar* also contains excess of *leucine.*
Leucine interferes with conversion of tryptophan to niacin.
Pellagra has been reported in India in *Telangana area of Andhra Pradesh* because of Jower (Sorghum vulgare) consumption.

319. Prevalence of HIV infection in antenatal women is less than 1% and in high risk population is less than 5%. The state belongs to ?

a) Group I

b) Group II

c) Group III

d) Group IV

Correct Answer - C
Ans. is `c' i.e., Group III
Based on sentinel surveillance data **HIV** prevalence in adult population can be broadly classified in three groups of state / UT sin the country.

320. In AIDs control programme, For treatment of STDs, blue colored pack is used for treatment of-

a) Urethral discharge

b) Scrotal swelling

c) Genital ulcers

d) Ano-rectal discharge

Correct Answer - C

Ans. is 'c' i.e., Genital ulcer

NACO centers providing ART (as of sept 2006)

- The National AIDS control organization (NACO) has increased the numbers of centres providing ART from 54 to 91 centres with another 9 more centres also getting operational soon.
- All the 9lcentres have specially appointed and trained doctors, counsellors and laboratory technicians to help initiate patients on ART and follow them regularly.
- At these 91 centres medicines for treating 85000 patients have been made available.
- The ART is a *combination of three potent drugs,* which is being given to the persons with advanced stage of AIDS.
- Apart from providing *free treatment,* all the ART centres are providing counselling to the infected persons so that they maintain regularly of their medication.
- ACO has branded the STI/RTI services as "Suraksha clinic" and has developed a communication strategy for generating demand for these services.

321. Not true about vaccines ?

a) Two live vaccines can be given at same time at different sites

b) Two live vaccines at same site should be given at least 3 weeks apart

c) In vaccine vial monitor if the color of inner square is same as outer background, vaccine is good for use

d) Live and killed vaccines can be given together

Correct Answer - C

Ans. is 'c' i.e., In vaccine vial monitor if the color of inner square is same as outer background, vaccine is good for use

Vaccine Vial monitor

- An important improvement in PPI during 1998 has been the use of *vaccine vial monitor.*
- Colour monitors or labels are put on vaccine bottles.
- Each label has a circle of deep blue colour.
- Inside it is a white square which changes colour and gradually becomes blue, if vaccine bottle *is* exposed to higher temprature.
- When the colour of the white square becomes blue like that of surrounding circle, the vaccine should be considered ineffective.
- Thereby, the health worker can easily ascertain that the vaccine being given is effective or not.

322. A patient comes with CLW on knee 10x2 cm, 12 hours old. He had taken TT 6 months back for another injury. What should be done ?

a) Nothing should be done

b) One dose of TT with immunoglobulin

c) Full course of TT

d) Full course of TT with immunoglobulin

Correct Answer - B
Ans. is 'b' i.e., One dose of TT with immunoglobulin
Prevention of tetanus after injury
All wounds must be thoroughly cleaned soon after injury - removal of foreign bodies, soil dust, necrotic tissue. This procedure will abolish anaerobic conditions which favour germination of tetanus spore.

323.

Lack of ability of a part to do normal function is called as ?

a) Impairment

b) Disease

c) Disability

d) Handicap

Correct Answer - C
Ans. is 'c' i.e., Disability
According to WHO definitions,
Disease: Any abnormal condition of an individual that impairs function
Impairment: Any loss or abnormality of psychological, physiological or anatomical structure or function
Disability: (Because of impairment,) any restriction or inability to perform an activity in a range considered normal for a human being

324. ICDS meals for pregnant women provides ?

a) 300 calories & 10 grams protein

b) 500 calories & 15 grams protein

c) 600 calories & 10 grams protein

d) 600 calories & 20 grams protein

Correct Answer - D

Ans. is d i.e., 600 calories & 20 grams protein

Under ICDS Scheme supplementary nutrition is given to:

- *Children below 6 yrs*
- *Nursing mothers*
- *Expectant mothers*

The aim is to supplement nutritional intake for

1. Each child 6-72 months of age 500 calories and 12-15 grams of protein (financial norm of Rs 6.00 per child per day).
2. Severely malnourished child 6-72 months of age → 800 calories and 20-25 grams protein (financial norm of Rs 6.00 per child per day).
3. Each pregnant and nursing woman → 600 calories and 18-20 grams of protein (financial norm of Rs 5.00 per beneficiary per day).

- Under the revised nutritional and feeding norms for supplementary nutrition, State goverments/UTs have been mandated to provide more than one meal to the children who come to AWCs, which include providing a morning snack in the form of milk/banana/egg/seasonal fruit/micronutrient fortified food followed by a hot cooked meal. For children below 3 years of age and pregnant & lactating mothers, *"take home ration"* is to be provided.
- *Supplementary nutrition is given for 300 days a year.*

325. Mid-day meals provided in schools provide ?

a) 1/2 of total calories & 1/2 of protein

b) 1/3 of total calories & 1/2 of protein

c) 1/2 of total calories & 1/3 of protein

d) 1/3 of total calories & 1/4 of protein

Correct Answer - B
Ans. is `b' i.e., 1/3rd of total calories & 1/2 of daily protein requirement

326. Which drug is not included in RNTCP regime for MDR TB ?

a) Cycloserine

b) Ethionamide

c) Levofloxacin

d) PAS

Correct Answer - D
Ans. is `d' i.e., PAS

327. Primordial prevention is done to prevent development of ?

a) Disease

b) Risk factors

c) Impairment

d) Disability

Correct Answer - B

Ans. is 'b' i.e., Risk factors

LEVELS OF PREVENTION

- There are four levels of prevention :?

1. Primordial prevention
2. Primary prevention
3. Secondary prevention
4. Tertiary prevention

Primordial Level of Prevention: Is primary prevention (see below) in purest sense

- *It is* the *prevention of the emergence or development of risk factors* in countries or population groups in which they have not yet appeared
- Modes of Intervention:

1. *Individual Education*
2. *Mass Education*

- *Primordial Level is Best level of prevention for Non-communicable diseases*

328. First step in epidemic done by an epidemiologist?

a) Identity the cases

b) Confirm the diagnosis

c) Identify the prone people

d) Identify the causative factors

Correct Answer - B

Ans. is 'b' i.e., Confirmation of diagnosis

Steps for Investigation of Epidemic :

- *Verification of diagnosis :*
- Is the *first step in investigation of an epidemic'*
- *Confirmation of existence of an epidemic:*
- Compare with disease frequencies during same period in previous years
- *Epidemic threshold:* An arbitrary limit of *'2 standard errors from the endemic occurrence'*

Defining the population at risk:

- Obtaining the map of the area
- Calculation of *'appropriate denominator of population at risk'*

Rapid search for all cases and their characteristics:

- Medical survey
- Epidemiological case sheet
- Searching for more cases: Search for new cases is carried out everyday, till the area is declared free of epidemic; this period is usually taken as *'twice the incubation period of the disease since the occurrence of last case'*

Data analysis:

- *Formulation of hypothesis*

- *Testing of hypothesis*
- *Evaluation of ecological factors*
- *Further investigation of population at risk*
- *Writing the report*

329. Formula to calculate sensitivity of a screening test ?

a) True positive/true positive + false negative

b) True negative/true positive + false negative

c) True positive/true negative + false positive

d) True negative/true negative + false positive

Correct Answer - A
Ans. is 'a' i.e., True positive/true positive + false negative
The **formula** for the positive likelihood ratio ("LR+") considers both **sensitivity** and specificity: it's **sensitivity** divided by (1-specificity), or the true positive rate divided by the false positives. This shows how much more likely is a person with the disease to score positive than a person without the disease.

330. False regarding larvae of anopheles ?

a) Long siphon tube

b) Parallel to water

c) Palmate hairs

d) None of the above

Correct Answer - A
Ans. is 'a' i.e., Long siphon tube

331. Recommended level of fluoride in drinking water?

a) 0·2-0·5 mg/L

b) 0-5-0·8 mg/L

c) 0·8-1·2 mg/L

d) 1·2-2·0 mg/L

Correct Answer - B
Ans. is 'b' i.e., 0·5 - 0·8 mg/L
The recommended level of fluoride in drinking water in the country is accepted as 0·5 to 0·8 mg/ Liter. -*Park*
Maximum permissible limit is 1·5 mg/Lit.

332. Dental fluorosis occurs if fluoride level is more than

a) 0.5 mg/dl

b) 1-5 mg/dl

c) 3 mg/dl

d) 6 mg/dl

Correct Answer - B
Ans. is 'b' i.e., 1-5 mg/dl
Dental fluorosis → > 1.5 mg/L (PPM)
Skeletal fluorosis → 3-6 mg/L (PPM)
Crippling fluorosis → > 10 mg/L (PPM)

333. Most common cancer in males in India ?

a) Ca rectum

b) Ca oral cavity

c) Ca testis

d) Ca bladder

Correct Answer - B
Ans. is 'b' i.e., Ca oral cavity
Most common cancer in males in India : Lip/oral cavity

334. Blindness criteria in India ?

a) Vision < 3/60

b) Vision < 6/60

c) Vision < 12/60

d) Vision < 18/60

Correct Answer - B
Ans. is 'b' i.e., Vision < 6/60
National programme for control of blindness (NPCB), India defines blindness as visual acuity of < 6/60 in better eve with best possible correction In contrast to WHO, which defines blindness as visual acuity of < 3/60).

335. Basic laboratory service is not available at PHC for which disease ?

a) TB

b) Malaria

c) Syphilis

d) Leprosy

Correct Answer - D

Ans. is 'd' i.e., Leprosy

Basic laboratory services at PHC

i. Routine urine, stool and blood tests.
i. Bleeding time, clotting time.
i. Diagnosis of RT1/STDs with wet mounting, Grama stain, etc.
v. Sputum testing for tuberculosis (if designated as a microscopy center under RNTCP).
v. Blood smear examination for malarial parasite.
i. Rapid tests for pregnancy.
i. RPR test for Syphilis/YAWS surveillance.
i. Rapid diagnostic tests for typhoid (Typhi Dot) and malaria.
x. Raid test kit for faecal contamination of water.
x. Estimation of chlorine level of water using orthotoludine reagent.

336. Polio is said to be eradicated if no case of polio by wild poliovirus occurs in an area for ?

a) 1 year

b) 2 years

c) 3 years

d) 4 years

Correct Answer - C
Ans. is 'c' i.e., 3 years
Certification of polio eradication is conducted an regional bases. Each region can consider certification only when all countries in the area demonstrate *the absence of wild poliovirus transmission for at least three consecutive years.*

337. Dose of rabies immunoglobulin for post-exposure prophylaxis ?

a) 10 IU/kg

b) 20 IU/kg

c) 30 IU/kg

d) 40 1U/kg

Correct Answer - B
Ans. is 'b' i.e., 20 IU/kg
Dose of rabies immunoglobulin (equine immunoglobulin) → 20 IU/kg body weight.
Dose of F (ab)$_2$ products → 40 IU/kg body weight.

338. An american wants prophylaxis for Hepatitis-A before coming to India for 10 days. What should be given ?

a) Two dose of HAV vaccine

b) immunoglobulin

c) Antiviral drug prophylaxis

d) Nothing is required

Correct Answer - B

Ans. is 'b' i.e., Immunoglobulin

<u>Advice for travellers</u>

Some of the recommendation pertain to the following :?

.. Avoid bathing with polluted water as this may result in ear, eye and skin infections. Excessive heat and humidity or over-exertion in these conditions may lead to exhaustion from loss of water and salt.

2. The measures for prevention of insect bites.

3. *Diarrhoeal Diseases* : "Be careful what you eat" is common advice to travellers, but very few truely understand its implications. Diarrhoea affects an estimated 20-50 per cent of all travellers. Contaminated food drinks are the most common source of these infections. Careful selection and preparation of food and drink offer the best protection. Unfortunately appearance of food is no guide as to its safety. The main personal proection is to consider unpasteurized milk, non-bottled drinks, uncooked food (apart from the fruits and vegetables that can be peeled or shelled), as likely to be contaminated and therefore unsafe. The food should be throughly and freshly cooked. Use boiled water or bottled mineral water (now available everywhere). Travellers should be aware of the importance of oral

rehydration fluids containing salt and glucose for countering dehydration.

4. *Malaria :* There is a high risk of acquiring malaria in endemic areas. Travellers are advised to protect themselves by chemoprophylaxis. Drug prophylaxis should begin at the latest on the day of arrival in the malarious areas and continued for 4-6 weeks after leaving the malarious areas.
5. *Hepatitis A :* Normal human immunoglobulin in a dose of 0·02-0·05 mg/kg of body weight has been recommended every 4 months. Ideally immunoglobulin should not be given within 3 weeks before, or untill 2 weeks after administration of a live vaccine. A highly safe, inactivated HAV vaccine is available in several European countries.
6. *Hepatitis E :* There is no vaccine against hepatitis E and immunoglobulin prepared in Europe and USA does not give much of protection. Avoidence of contaminated food and water is the only effective protective measure.
7. *Hepatitis B :* Hepatitis B vaccines are available and are safe. Three doses of vaccine constitute the complete course. The first two doses are given one month apart and the third dose about 6 months later.
8. *STD and HIV :* Measures for preventing STD are the same whether the individual is travelling abroad or not, i.e. avoidance of sex altogether or limit it to a single faithful, uninfected partner. Use of condom is an important preventive measure. To reduce the risk of acquiring HIV and hepatitis B from syringes and needles, travellers should avoid injectable drugs and if an injection is essential they should make sure that the needle and syringe come from sterile pack.
9. *Yellow fever :* Vaccination certificate for yellow fever is the only certificate required for international travel. Yellow fever vaccine is recommended for travellers to countires designated as yellow fever endemic zone.
10. *Tetanus :* It is a wise precaution for the traveller to have a booster dose of tetanus toxoid if 10 years or more have elapsed since the last injection of a complete course or booster.

339. Least Neonatal mortality rate is seen in -

a) Delhi

b) Tamil Nadu

c) Karnataka

d) Maharashtra

Correct Answer - B
Ans. is 'b' i.e., Tamil Nadu
Overall, least neonatal mortality is recorded in Kerala. However, among the given options Tamilnadu has minimum neonatal mortaltiy.

340. As per RNTCP guidelines first do in TB suspect case ?

a) Chest X-ray

b) Sputum culture

c) Sputum microscopy

d) Start short-course chemotherapy

Correct Answer - C

Ans. is 'c' i.e., Sputum microscopy

<u>Treatment stratgics in RNTCP</u>

- *Under the RNTCP active case finding is not prusued.*
- *Case finding is passive.*
- Patients presenting thremselves with symptoms suspicious of tuberculosis are screened *through 2 sputum smear examination.*
- Sputum microscopic examination is done in designated RNTCP microscopy centres.
- *It is essential to examine 2 sputum specimens of each patient before a conclusive diagnosis can be made.*
- If only 1 sputum smear is positive, chest x-ray helps in diagnosis.
- Once the diagnosis is confirmed, treatment is started according to DOTS (Directly observed therapy short term).
- Patient are expected to *collect drugs once a month* (not daily) on fixed dates from the nearest treatment centre.

341. Case control study is an example of ?

a) Prospective study

b) Retrospective study

c) Combined retrospective and prospective study

d) Study at one point of time

Correct Answer - B
Ans. is 'b' i.e., Retrospective study

342. Example of case control study (risk factor and disease/outcome) ?

a) Maternal smoking and congenital malformation

b) Vaginal adenocarcinoma and intrauterine exposure to DES

c) Thalidomide exposure and teratogenicity

d) All of the above

Correct Answer - D

Ans. is `d' i.e., All of the above

Important risk factors and their outcomes/diseases which have been studied by case-control study are :-

i. Cigarette smoking and lung cancer.
i. *Maternal smoking and congenital malformation.*
i. Radiation and leukemia.
v. OCP used and hepatocellular carcinoma.
v. Herpes-simplex and Bells palsy.
i. Artificial sweeteners and bladder cancer.
i. *DES exposure in fetal life and vaginal adenocarcinoma.*
i. OCP use and thromboembolic disease.
s. *Thalidomide use in pregnancy and teratogenicity.*

343. Not true about propagated epidemics ?

a) Gradual rise

b) Gradual fall

c) Person to person transmission

d) No secondary wave

Correct Answer - D
Ans. is 'd' i.e., No secondary wave

344. Pulses contain all except ?

a) Lysine

b) Cystein

c) Arginin

d) Protein

Correct Answer - B

Ans. is `b' i.e., Cystein

Pulses

- Pulses comprise a variety of grams, also known as dhal.
- Pulses contain 20 to 25% of protein, which is double that found in wheat and three times that found in Rice.
- In fact, pulses contain more protein than eggs, fish or flesh food. But in regard to quality, pulse proteins are inferior to animal proteins.
- *Pulse proteins are poor in methionine and to a lesser extent of cystein.*
- On the other hand pulse proteins are *rich in lysine.*
- Soyabeam is exceptionally rich in protein.
- Pulses are rich in minerals and B-group vitamins such as riboflavin and thiamin.
- In dry state pulses do not contain vitamin 'C'. However, *Germinating pulses contain higher concentration of vitamin 'C' and 'B' vitamins.*
- *Fermentation also modifies the nutritive value of pulses in that vitamin content of riboflavin, thiamine and niacin is enhanced.*
- Pulse are called *"poor man's meat".*

345. True about measles are all except ?

a) Koplik's spots is pathognomonic

b) Source is a case

c) Infectivity is low

d) Affect age group 1 to 3 years

Correct Answer - C
Ans. is 'c' i.e., Infectivity is low
Measles has high infectivity with secondary attack rate of 80%.
Other options are correct.

346. Which of the following is not a killed vaccine ?

a) Polio

b) HBV

c) HAV

d) Yellow fever vaccine

Correct Answer - D
Ans. is 'd' i.e., Yellow fever vaccine
Yellow fever vaccine is a killed vaccine.

347. Most important measure to prevent hospital infection ?

a) Use of antibiotics

b) Use of antiseptics

c) Proper hand washing

d) Formalin fumigation

Correct Answer - C

Ans. is 'c' i.e., Proper hand washing

There are following types of modes of transmission of hospital-acquired infections :

1) Contact transmission

i. It is the *most common and most preventable means of transmission.* It is divided into two types -

i. *Direct contact :* It involves contact of body surface to body surface with a physical transfer of microorganisms. *Hand contact is most common mode of transmission.*

i. *Indirect contact :* It involves body surface contact with a contaminated intermediate object.

- As hand contact is the most common mode of transmission, the best preventive measure of nosocomial infection is proper hand hygiene.

2) Droplet transmission

- It occurs when droplet containing microorganisms from an infected person are propelled through the air (e.g. coughing, sneezing) and land on the mouth, eyes or nose of another person.

3) Airborne transmission

- It results when a droplet containing microorganisms evaporates and remains suspended in air for a long time (this should not be confused with droplet infection, in which transmission is immediate

and droplets do not remains suspended in the air).

- Airborne transmission also occurs by dust particles containing microorganism.

4) Vehicle transmission

- It refers to transmission of infection by contaminated items such as food, water, medications, devices and equipment.

348. Absolute contraindication for insertion of IUD

a) History of PID

b) Congenital uterine malformation

c) Undiagnosed vaginal bleeding

d) Purulent cervical discharge

Correct Answer - C

Ans. is 'c' i.e., Undiagnosed vaginal bleeding

Contraindications

ABSOLUTE:

a. Suspected pregnancy
b. Pelvic inflammatory disease
c. Vaginal bleeding of undiagnosed etiology
d. Cancer of the cervix, uterus or adnexa and other pelvic tumours
e. Previous ectopic pregnancy

RELATIVE :

a. Anaemia
b. Menorrhagia
c. History of PID since last pregnancy
d. Purulent cervical discharge
e. Distortions of the uterine cavity due to congenital malformations, fibroid
f. Unmotivated person

349. Rabies vaccine was first developed by ?

a) Robert Koch

b) Louis Pasteur

c) Edward Jenner

d) Loeffler

Correct Answer - B
Ans. is 'b' i.e., Louis pasteur
Louis pasteur is associated with :

- Development of live vaccine (first was anthrax)
- *Development of vaccine for rabies (hydrophobia)*
- Introduction of technique of sterilization
- *Disprove the theory of spontaneous generation (abiogenesis)*
- Established the different growth need of different bacteria (helped in complex media)
- Coined the term vaccine

350. Human development index includes all except ?

a) Longevity

b) Knowledge

c) Income

d) Literacy rate

Correct Answer - D

Ans. is 'd' i.e., Literacy rate

Human development index

- HDI is a composite index combining indicators representing three dimensions.

i. *Longevity : Life expectancy at birth.*

i. *Knowledge : Mean years of schooling (gross enrolment ratio) and expected year of schooling.* (In older editions of Park, i.e., 21st/e and older than that, it was *adult literacy rate* instead of expected year schooling).

i. *Income : GNI Per Capita* (In older editions of Park, it was *GDP per capita* instead of GNI per capita).

351. True about influenza ?

a) Incubation period 2-3 weeks

b) Most infections are subclinical

c) Type-A virus causes Reye's syndrome

d) Pandemic is caused by Type-B virus

Correct Answer - B

Ans. is 'b' i.e., Most infections are subclinical

Influenza

- Influenza virus a RNA virus, belongs to orthomyxovirus.
- There are three viral subtypes : *i) Type A* (causes all pandemics and most epidemics); type B; and type C (not circulating currently).
- Currently the influenza viruses circulating in the world are : *11_1 N, of type A (causes swine flu);* H2 N2 of type A; H_3 N_2 of type A ; H_5 N_I of type A (causes birdflu or avian influenza); *H_7 N_9 of type A (caused epidemic of avian influenza in China in 2013);* and type B.
- Influenza shows *cyclic trend* with epidemic occuring every 2-3 years in case of influenza - A and every 4-7 years in case of influenza-B. Pandemics are caused by only influenza - A every 10-15 years.
- *Influenza affects all ages and both sexes.*
- Source of infection of influenza is a clinical case or subclinical case.
- *Major reservoir of influenza virus exists in animal and birds.*
- Incubation period is 18-72 hours. *Most of the infections are subclinical. Clinical cases* present with cough, fever, myalgia and headache.

352. Aedes aegypti index near ports should be less than -

a) 1%

b) 5%

c) 8%

d) 10%

Correct Answer - A
Ans. is 'a' i.e., 1%
For the surveillance of Aedes mosquitoes, the WHO uses an index known as *Aedes aegypti index.*
This is a house index and is defined as *"The percentage of houses and their premises, in a limited well-defined area, showing actual breeding of Aedes aegypti larvae".*
This index should not be more than 1% in towns and seaports in endeic areas to ensure freedom from yellow fever.
International health regulation for yellow fever
Measures designed to restrict the spread of yellow fever are specified in the "International health regulation" of WHO.

- These are implemented by the *Govt of India* through stringent aerial and maritime traffic regulations.
- Broadly these comprise : -
  i) Travellers
- All travellers (including infants) exposed to yellow fever or passing through endemic zones of yellow fever must posses a valid international certificate fo vaccination against yellow fever before they are allowed to enter yellow fever receptive areas like India.
- *The validity of the certificate begins 10 days after the date of vaccination* and extends up to 10 years.

- Revaccination performed before the end of the validity of certicicate renders the certificate valid for a further period of 10 years starting on the day of revaccination.
- If no such certificate fo vaccination is available, the travellar is placed on *quarantine for 6 days from the date of leaving an infected area.*

ii) Mosquitoes

- The aircraft and ships arriving from endemic areas are subjected to aerosol spraying with prescribed insecticides.
- *Airports and Seaports are kept free from the breeding of insect vectors over an area extending at least 400 metres around their perimeters.*
- *The "aedes aegypti index" is kept below 1.*

353. Multifactorial causation of disease theory was proposed by

a) Louis Pasteur

b) Pettenkofer

c) Robert koch

d) Aristotle

Correct Answer - B
Ans. is 'b' i.e., Pettenkofer
Multifactorial causation of disease theory was proposed by Pettenkofer.

354. Major sign for AIDS surveillance in WHO case definition ?

a) > 10% weight loss

b) Cough > 1 month

c) Generalized lymphadenopathy

d) Disseminated Herpes

Correct Answer - A

Ans. is *'a' i.e.*, > 10% weight loss

<u>WHO case definition for AIDS surveillance</u>

- For the purpose of AIDS surveillance an adult or adolescent (six years of age) is considered to have AIDS if at least *2 of the following major signs* are present in combination with *one minor sign.*

***Major* Signs**

- Weight loss > 10 % of body weight
- Chronic diarrhoea for more than 1 month
- Prolonged fever for more than 1 month

Minor signs

- Persistent cough for more than one month
- Generalized pruritic dermatitis
- History of herpes zoster
- Chronic progressive or disseminated herpes simplex infection
- Generalized lymphadenopathy
- Oropharyngeal Candidiasis.

<u>Expanded WHO case definition for AIDS surveillance</u>

- For the purpose of surveillance on adult or adolescent (>12 years of age) is considered to have AIDS if a test for
- HIV antibody gives a positive result and one or more of the following conditions are present :

- >10% body weight loss or cachexia, with diarrhoea or fever or both, for at least 1 month, not known to be due to a condition unrelated to HIV infection.

355. Not a copper containing IUD ?

a) CuT-200

b) Nova -T

c) Multiload-250

d) LNG-20

Correct Answer - D
Ans. is `d i.e., LNG-20
LNG-20 is third generation IUD which does not contain cooper.
Other three options are 2"^{d} generation (copper containing) IUDs.

356. Current MMR in India is (per 1 lac live births) ?

a) 400

b) 280

c) 180

d) 110

Correct Answer - C
Ans. is 'c' i.e., 180

357. Not a baby friendly hospital recommendation ?

a) Breast feeding with half-hour of birth

b) Breast feeding on demand

c) Use of artificial teats when required

d) No oral feed other than breast milk

Correct Answer - C

Ans. is 'c' i.e., Use of artificial teats when required

Baby friendly hospital initiatives

Baby friendly hospital initiative (BFHI) was launched for *promotion, protection and support of breastfeeding.*

It was launched by *WHO and UNICEF.*

BFHI has listed following ten steps, which the hospital must fulfill.

.. Have a written breastfeeding policy that is routinely communicated to all health care staff

2. Train all health care staff in skills necessary to implement this policy.

3. Inform all pregnant women about the benefits and management of breastfeeding.

4. Help mothers initiate berastfeeding within a half-hour of birth.

5. Show mothers how to breastfeed, and how to maintain lactation even if they should be separated from their infants.

6. Give newborn infants no food or drink other than breastmilk, unless medically indicated.

7. Practice rooming-in-allow mothers and infants to remain together - 24 hours a day.

8. Encourage breastfeeding on demand.

9. Give no artificial teats or pacifiers (also called dummies or soothers) to breastfeeding infants.

). Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.

358. Goal of NPCB was to reduce prevalence of blindness to ?

a) < 0·3% by 2000

b) < 0·3% by 2005

c) < 0·5% by 2010

d) < 0·5% by 2015

Correct Answer - A

Ans. is 'a' i.e., < 0·3% by 2000

NATIONAL PROGRAMME FOR CONTROL OF BLINDNESS (NPCB)

The national program for Control of Blindness (NPCB) has been re-designated recently as the National Programme for Control of Blindness and Visual Impairment

- *Launched in 1976*
- *Its objective is to reduce the prevalence of eye diseases in general, and the prevalence of blindness from 1·40% to 0·3% by 2000 AD.*
- Apex Centre (National Eye Institute) *is*
- Dr. Rajendra Prasad Centre for Ophthalmic Sciences (New Delhi, AIIMS).
- Revised strategies of NPCB
- a) To make NPCB more comprehensive by strengthening services for other causes of blindness like corneal blindness(requiring transplantation of donated eyes), refractive errors in school-going children, improving follow-up services of cataract operated persons and treating other causes of blindness like glaucoma; To shift from the eye camp approach to a fixed facility surgical approach and from conventional surgery to IOL implantation for better quality of post-

operative vision in operated patients.

- b) To expand the World Bank project activities like construction of dedicated eye operation theatres, eye wards at the district level, training of eye surgeons in modern cataract surgery and other eye surgeries and supply of ophthalmic equipment, etc. to the whole country.
- c) To strengthen the participation of Voluntary Organizations in the program and to earmark geographic areas to NGOs and Government Hospitals to avoid duplication of effort and improve the performance of Government Units like Medical Colleges, District Hospitals, Sub Divisional Hospitals, Community Health Centres, Primary Health Centres.
- d) To enhance the coverage of eye care services in tribal and other under-served areas through the identification of bilateral blind patients, preparation of village-wise blind register and giving preference to bilateral blind patients for cataract surgery.

359. True about critical path method are all except

a) Network analysis

b) Longest path

c) Cannot be delayed

d) Shortest path

Correct Answer - D
Ans. is 'd' i.e., Shortest path
Network analysis
A network analysis is a graphic of all events and activities to be completed in order to reach an end objective. It brings greater discipline in planning. The two common types of network technique are :
a) Programme Evaluation and Review technique (PERT)
b) Critical Path method (CPM)
Programme Evaluation and Review technique (PERT)
PERT is a management technique which makes possible more detailed planing and more comprehensive supervision.
PERT is method to analyze the involved tasks in completing a given project, especially the time needed to complete each task, and identifying the minimum time needed to complete the total project.
The essence of PERT is to construct an arrow diagram, which represents the logical sequence in which events must take place. It is possible with such a diagram to calculate the time by which each activity must be completed, and to identify those activities that are critical.
Critical path method (CPM)
The *longest path* of the network is called the critical path. Critical

path method determines the activities of a project which are critical and are given longest path. Other activities are total float, i.e. they can be delayed without making the project longer. Any delay in activity on the critical path results in delay of the project. o In the above figure, the longest path is from equipment ordered to equipment installed.
That means, this is the *critical path* and *installating of equiment is the most critical step* (taking 10 months). o Other activities are total float, i.e. they can be delayed for sometimes without delaying the project.

360. Total number of TB cases in a community of 6000 population 150. Number death due to TB are 30. What is the TB specific death rate (per 1000 population) ?

a) 20

b) 10

c) 5

d) 0-5

Correct Answer - D

Ans. is 'd' i.e., 0-5

Specific death rates

When analysis is planned to throw light on etiology, it is essential to use specific death rates.

The specified death rate helps identify particular 'at risk' group *(s)* for prevention.

It also permits comparison between different causes within same population.

The specific death rates may be ?

a) Cause or disease specific, e.g. TB, cancer, accident.

b) Related to specific groups - e.g. age specific, sex specific.

361. Average daily breast milk output during first 6 months ?

a) 100-200 ml

b) 200-300 ml

c) 300-400 ml

d) 500-600 ml

Correct Answer - D
Ans. is 'd' i.e., 500-600 ml
Under normal conditions, Indian mothers secrete 450 - 600 ml of milk daily
Maximum output of milk is at 5 - 6 months (730 ml/ day) after which the output constantly declines.
At 12 months the output is 525 ml/day -Park p. 455

362. Which stage of larva of housefly is voracious feeder -

a) 1

b) 2

c) 3

d) 4

Correct Answer - A
Ans. is 'a' i.e., 1

- The larva of housefly (maggot) moults twice, i.e. there are three instar stages.
- *The first instar larva is a varacious feeder,* feeding mainly on decomposing liquid organic matter.

363. True about carriers ?

a) Infection with clinical symptoms

b) Serves as source of infection

c) More infectious than cases

d) Less dangerous than cases

Correct Answer - B
Ans. is 'b' i.e., Serves as source of infection
A carrier is defined as *"an infected person or animal that harbours a specific infectious agent in the absence of clinical disease and serves as a potential source of infection".*
As a rule carriers are less infectious than cases, but epidemiologically they are more dangerous than cases because they escape recognition, and continuing as they do to live a normal life among the population or comunity, they readily infect the susceptible individuals over a wider area and longer period of time.

364. Typhoid oral vaccine is given ?

a) 1, 3, 5 days

b) 1, 2, 3 days

c) 1, 2, 4 days

d) 1, 7, 14 days

Correct Answer - A

Ans. is 'a' i.e., 1, 3, 5 days

ANTI-TYPHOID VACCINES

- The old parenteral killed whole-cell vaccine was effective but produced strong side-effects.
- So, they are not used now.
- Two safe and effective vaccines are now licensed and available : -

1.The Vi polysachharide vaccine

1. It is composed of purified Vi capsular polysaccharide from the Ty2 strain of S.Typhi.
2. It is administered *subcutaneously or intramuscularly.*
3. Only *one dose* is required.
4. The vaccine confers protection 7 *days after injection.*
5. To maintain protection, re-vaccination is recommended every 3 years.
6. The vaccine is licensed for individuals *aged 2 years.* → It does not elicit immune response in children < 2 years.
7. The vaccine is stable for 6 months at 37° C and for 2 years at 20°C. The recommended storage temprature is *2-8°C.*
8. The Vi polysaccharide vaccine can be co-administered with other vaccines relevant for international travellers-such as yellow fever and hepatitis A
9. Acyclovir is given to prevent the development of systemic disease in

varicella infected immunosuppresed patients & can halt the progression of zoster in adults.

- Varicella zoster immunoglobulin given within 72 hrs of exposure can prevent chicken pox and is recommended in exposed immunocompromised persons.
- A live attenuated varicella vaccine is recommended for children between 12-18 months. It is effective even if given within 3-5 days after exposure.

2.The Ty 21a oral vaccine

- It is an *orally* administered, *live attenuated* Ty2 strain of S.Typhi in which multiple genes (including for Vi Capsular polysaccharide) have been mutated chemically.
- This lyophilized vaccine is available in 2 preparations : *?*

1. *Enteric coated capsules* → Used for travellers to developing countries. It is used in individuals 5 years of age.

2.Liquid suspension → Used by public health programmes for young children in developing countries. It can be administered from the age of 2 years.

.. *Vaccine is administered on 1, 3 and 5the day, i.e., a 3-dose regimen is recommended.*

2. Vaccine confers protection 7 days after the last dose.

3. The recommendation is to repeat this series (3 doses) every 3 years for people living in endemic areas, and every year for individuals travelling from non-endemic to endemic countries.

4. Ty 21 a requires storage at *2-8°C,* it retains potency for approximately 14 days at 25°C.

5. Proguanil and antibacterial drugs should be stopped from 3 days before until 3 days after giving Ty 21 a, as these drugs may harm live bacteria.

6. The vaccine is not efficacious if administered at the time of ongoing diarrhea.

7. Avoided during diarrhoea as efficacy will reduce.

8. Can be given to HIV +ve, asymptomatic persons with CD4 cell count of > 200/mm3

9. Well tolerated and has low rates of adverse events.

0. Not recommended in congenital or acquired immunodeficiency, acute febrile illness, acute intestinal infection and in patients on

antimitotic drugs
.. May be given simultaneously with live vaccines of polio, cholera, yellow fever and MMR.

365. True about typhoid vaccines are all except ?

a) Vi polysaccharide vaccine is given in single dose

b) Storage temperature is +2 to +8°C

c) Typhoral vaccine is given in 3 doses

d) Typhoral vaccine cannot be given with other live vaccines

Correct Answer - D
Ans. is 'd' i.e., Typhoral vaccine cannot be given with other live vaccines

366. Transmission of microfilaria in mosquito is ?

a) Cyclo-developmental

b) Cyclo-propagative

c) Propagative

d) Cyclical

Correct Answer - A

Ans. is 'a' i.e., Cyclodevelopmental

In vector born diseases, an arthropod or any living carrier (e.g., snail) acts as a vector and transports an infectious agent to a susceptible individual.

- Transmission by a vector may be of following types : ?

A. Mechanical transmission

- The infectious agent is mechanically transported by vector, e.g., through souling of feet of flying arthropod.
- There is no development or multiplication of infectious agent within the vector.

B. Biological transmission

- The infectious agent undergoes replication (change in number) or development (change in form) or both in vector.
- So, inectious agent requires an incubation period *(extrinsic incubation period)* before vector can transmit it to host.
- This type of transmission is of three types : -

i) Propagative

- Agent undergoes multiplication (change in number) in the vector.
- There is no development → No change in form.
- Example → *Plague bacilli in rate fleas.*

ii) Cyclo-developmental

- Agent undergoes only development → Change in form.
- No multiplication → No change in number.
- Example → *Micorfilaria in mosquito.*

iii) Cyclo-propagative

- Agent undergoes both development and multiplication → Change in form and number.
- Example → *Malaria parasite (plasmodium sp.) in mosquito.*

367. Denominator in perinatal mortality rate ?

a) Total births

b) Total live births

c) Live births + Still birth

d) Total number of newborns

Correct Answer - B
Ans. is 'b' i.e., Total live births

368. Iron content of MALA-D ?

a) 10 mg

b) 19-5 mg

c) 29·5 mg

d) 40 mg

Correct Answer - B
Ans. is 'b' i.e., 19-5 mg
MALA-D contains -
i) 30 ug (0·03 mg) of ethinyl estradiol.
ii) 0·15 mg of desogestrel (D-norgestrel).
Each brown coloured film coated tablet contains *60 mg ferrous fumarate equivalent to ferrous iron 19·5 mg.*

369. Protein requirement in adult male ?

a) 0·5 gm/kg/day

b) 1 gm/kg/day

c) 1·5 gm/kg/day

d) 2 gm/kg/day

Correct Answer - B
Ans. is 'b' i.e., 1 gm/kg/day

370. People are arranged alphabetically by their names and then every 3rd person is chosen for study. The type of sampling is ?

a) Stratified random

b) Systematic random

c) Simple random

d) None of the above

Correct Answer - B

Ans. is 'b' i.e., Systematic random

Simple random sampling

- Simple random sampling, also, known as *'unrestricted random sampling';* is applicable for small, homogenous, readily available population and is used in clinical trials.
- In simple random sampling each individual is chosen randomly and entirely by chance.
- So, *each individual has the same probability of being chosen* at any stage during the sampling process. *For example*
- Let us assume you had a school with 1000 students, divided equally into boys and girls, and you wanted to select 100 of them for further study.
- You might put all their names in a bucket and then pull 100 names out.
- Not only does each person have an equal chance of being selected, we can also easily calculate the probaility of

371. Protein content in F-75 milk formula ?

a) 0·5 gm per 100 ml

b) 0-9 gm per 100 ml

c) 1-5 gm per 100 ml

d) 2·0 gm per 100 ml

Correct Answer - B
Ans. is `b' i.e., 0·9 gm per 100 ml

372. Measles elimination criteria are all except ?

a) Absence of endemic measles

b) For more than 12 months

c) Incidence < 1 per 1 lac population

d) Transmission at low level

Correct Answer - D

Ans. is 'd' i.e., Transmission at low level

- *WHO defines elimination of measles as the absence of endemic measles for a period of 12 months in the presence of adequate surveillance.*
- *One indicater of measles elimination is a sustained measles incidence < 1/100, 000 population.*
- *In 2005, the World Health Assembly set a goal of achieving a 90% reduction in global measles mortality by 2010 as compared with level in 2000.*

373. In Revised National Tuberculosis Control programme the silent features are to achieve ?

a) Cure rate 85% & diagnosis 85%

b) Cure rate 85% & diagnosis rate 70%

c) Cure rate 80% & diagnosis 85%

d) Cure rate 80% & diagnosis rate 80%

Correct Answer - B

Ans. is 'b' i.e., Cure rate 85% & diagnosis rate 70%

Revised National Tuberculosis Control Programme

The Government of India, WHO and World Bank together reviewed the NTP in the year 1992. Based on the findings a revised strategy for NTP was evolved.

The salient features of this strategy are : -

- Achievement of *at least 85 percent cure rate of* infectious cases through supervised Short Course Chemotherapy involving peripheral health functionaries.
- Augmentation of case finding activities through quality sputum microscopy *to detect at least 70 percent estimated cases;* and
- *Involvement of NG0s;* Information, Education and communication and improved operational research.
- For a *"TB - free India"* following objectives have been proposed :

i. *To achieve 90% notification rate*

i. *To achieve 90% success rate for all new cases and 85% for retreatment cases*

i. To significantly improve the successful outcomes of treatment of drug resistant TB cases

7. To decrease morbidity and mortality of HIV associated TB
7. To improve outcomes of TB care in the private sector

374. Proportional mortality rate is ?

a) Number of death due to a particular cause

b) Number of death during that year

c) Number of death in one month

d) None

Correct Answer - A

Ans. is 'a' i.e., Number of death due to a particular cause

Proportional mortality rate (ratio)

- Proportional mortality rate measures the proportion of total death due to specific cause or proportion of deaths in a particular age group.
- It is defined as *"number of deaths due to a particular cause (or in specific age group) per 100 total deaths".*
- It is the *'simplest measure of estimating the burden of disears'* in the community.
- It is a useful *'health Status indicator';* indicates magnitude of preventable mortality.
- It is used when population data is not available.
- It does not indicate the risk of members of population contracting or dying from the disease.

375. Best indicator for burden of disease ?

a) Incidence

b) Crude death rate

c) Cause specific death rate

d) Proportional mortality rate

Correct Answer - D
Ans. is 'd' i.e., Proportional mortality rate

376. Pearls index?

a) Per 100 woman years

b) Per 10 woman years

c) Per 1000 woman years

d) Per 50 woman years

Correct Answer - A
Ans. is 'a' i.e., Per 100 woman years

377. Neurolathyrism is due to ?

a) Argemone oil

b) Jhunjhunia

c) Khesari dal

d) None

Correct Answer - C
Ans. is 'c' i.e., Khesari dal

378. NFHS-3 was conducted in ?

a) 1992-93

b) 1998-99

c) 2005-06

d) 2009-10

Correct Answer - C

Ans. is 'c' i.e., 2005-06

National family health survey (NFHS)

- Is a large-scale, multi-round survey conducted in a representative sample of households throughout India.
- 3 *rounds of the survey have been conducted till date.*

1. NFHS-1: 1992-93
2. NFHS-2: 1998-99
3. *NFHS-3: 2005-06*

- *Goals of NFHS survey:*

1. To provide essential data needed by Ministry of Health & Family Welfare and other agencies for policy and programme purposes
2. To provide information on important emerging health and family welfare issues

- *Few key findings of NFHS-3, India (2005-06)*

1. Literacy rate : Male - 83%, Female - 59%.
2. IMR : 57 per 1000 live births.
3. TFR : 2.6
4. Contraceptive prevalence : 56% (Sterilization 37%)
5. 3 AN check ups : 51%.
6. *Took IFA :* 65% (Took IFA for 90 days) or more : 23%.
7. *Received > 2 TT injections : 76%*
8. *Institutional deliveries :* 41%

9. *Delivery assisted by health professionals :* 48%.
0. *Delivery conducted by a skilled provider :* 47%.
1. *Anemia - children :* 79%
2. *Anemia - pregnancy :* 58%
3. *Women experienced domestic violence :* 37%

379. Not true about Alma-Ata declaration ?

a) Was held in 1978

b) Community participation

c) Health for all

d) Best approach for health for all is basic health care

Correct Answer - D
Ans. is 'd' i.e., Best approach for health for al is basic health care
The Declaration of Alma-Ata (1978) by emphasizing the need for *"individual and community participation"* gave a new meaning and direction to the practice of health education.
In 1978, the Alma-Ata International conference on Primary Health Care reaffirmed Health for All as the major social goal fo governments, and stated that the best approach to achieve the goal of HFA is by providing primary health care, especially to the vast majority of underserved rural people and urban poor.
It was envisaged that by the year 2000, at least essential health care should be accessible to all individuals and families in an acceptable and affordable way, with their full participation.
The Alma-Ata Conference called on all governments to formulate national policies, strategies and plans of action to launch and sustain primary health care as part of a national health system.
It is left to each country to develop its norms and indicators for providing primary health care according to its own circumstances.

380. Level of Hardness if the value is 50-150 mg/L ?

a) Soft water

b) Moderately hard water

c) Hard water

d) Very hard water

Correct Answer - B
Ans. is 'b' i.e., Moterately hard water

381. Mental Health Act was passed in ?

a) 1982

b) 1987

c) 1971

d) 1950

Correct Answer - B
Ans. is 'b' i.e., 1987

382. All are components of *'Health for all'* except ?

a) Adequacy

b) Acceptibility

c) Equity

d) Resource allocation

Correct Answer - D

Ans. is 'd' i.e., Resource allocation

Health for All

- Health for all' is defined as "attainment of a level of health that will enable every individual to lead a socially and economically productive life".
- The fundamental principle of HFA strategy is equity, that is, an equal, health status for people and countries, ensured by an equitable distribution of health resources.
- The best approach to achieve the goal for HFA is by providing primary health care.
- At least essential health care should be accessible to all individuals in an acceptable and affordable way.

The seven principles of health for all outline by WHO

i. The right to health
i. Health promotion
i. Equity in health (equitable distribution)
v. Primary health care
v. Community participation
i. Intersectoral cooporation
i. Intersectoral collaboration

Primary health care (PHC) is one of the most important component.

The basic requirments for PHC are (8A's and 3C's) -

- Appropriateness
- Availability
- *Adequacy*
- Accessibility
- *Acceptibility*
- Affordability
- Assessability
- Accountability
- Completeness
- Comprehensiveness
- Continuity

383. Randomized study is done in people who are volunteer for the study. Which type of bias may occur ?

a) Hawthorne bias

b) Berkesonian bias

c) Selection bias

d) Attention bias

Correct Answer - C
Ans. is 'c' i.e., Selection bias

384. In a child who is allergic to egg, which vaccine should be avoided ?

a) Measles

b) MMR

c) Influenza

d) DPT

Correct Answer - C
Ans. is 'c' i.e., Influenza

385. "3 by 5" initiative in AIDS control programme is ?

a) Providing 3 million people treatment by end of 2005

b) Providing treatment to 3 out of 5 patients

c) Reducing incidence of AIDS by 3% by 2005

d) All of the above

Correct Answer - A

Ans. is 'a' i.e., Providing 3 million people treatment by end of 2005

3 by 5 target

- On 1st December 2003, WHO and UNAIDS announced a detailed plan to reach the "3 by 5 target" of providing antiretroviral treatment (ART) to three million people living with HIV/AIDS in the developing countries by the end of 2005.
- Ultimate goal of this strategy is to provide universal access to ART to anyone who needs it.
- It has five Pillars (focus areas of concerns) :?

1. Simplified standard tools to deliver ART
2. A new service to ensure effective, reliable supply of medicines and diagnostics
3. Dissemination and application of new knowledge and successful strategy
4. Urgent, sustained support to countries
5. Global leadership, backed by strong partnership

386. Index of operational efficiency of Malaria ?

a) API

b) ABER

c) Infant parasite rate

d) Spleen rate

Correct Answer - B
Ans. is 'b' i.e., ABER
Annual blood examination rate (ABER) is an index of operational efficiency.

387. Impact indicator for ASHA ?

a) Number of ASHA trained

b) Infant mortality rate

c) % of institutional deliveries

d) % of JSY claims made to ASHA

Correct Answer - B
Ans. is 'b' i.e., Infant mortality rate
Monitoring and Evaluation of ASHA's work
Government of India has set up following indicators for monitoring ASHA (41).
1.Process Indicators
a) Number of ASHAs selected by due process
b) Number of ASHAs trained; and
c) % of ASHAs attending review meeting after one year
2.Outcome Indicators
a) % of newborn who were weighed and families counseled.
b) % of children with diarrhoea who received ORS.
c) % of deliveries with skilled assistance.
d) % of institutional deliveries.
e) % of JSY claims made to ASHA
f) % of completely immunized in 12 to 23 months age group.
g) % of unmet need for spacing contraception among BPL.
h) % of fever cases who received chloroquine with in first week in a malaria endemic area.
3.Impact Indicators
a) IMR
b) Child malnutrition rates
c) Number of cases of TB/leprosy detected as compared to previous year

year.

388. Iodized salt is given to prevent goitre to ?

a) All population

b) Population of Himalayan belt

c) Population of Hilly areas

d) Population of village area

Correct Answer - A
Ans. is 'a' i.e., All population
In India, the **entire population** is prone to IDD due to deficiency of iodine in the soil of the subcontinent consequently the food derived from it.
The iodization of salt is now the most widely used prophylactic public health measure against endemic goitre.
In India the level of iodization is fixed under the Prevention of food adulteration (PFA) act and is *not less than 30 ppm at the production point and not less than 15 ppm of iodine at the consumer level.*

389. Ujjwala scheme does not include ?

a) Rescue

b) Rehabilitation

c) Reintegration

d) Reward

Correct Answer - D
Ans. is `d' i.e., Reward

390. Positive mortality indicator is ?

a) IMR

b) Child mortality rate

c) MMR

d) Life expectancy

Correct Answer - D

Ans. is 'd' i.e., Life expectancy

<u>Mortality indicators</u>

These are :?

i. Crude death rate
i. Maternal mortality rate
i. Expectation of life (life expectancy)
v. Disease specific mortality rate
v. Infant mortality rate
i. Age specific death rate
i. Child mortality rate
i. Adult mortality rate
x. Under-5 proportional mortality rate
x. Years of potential life lost

- Among these only *life expectancy is a positive mortality indicator,* i.e. increase life expectancy means improvement in health.
- All other are 'negative' health indicators, i.e. increase value of these indicators implies poor health of community.

391. Most common manifestation of mumps in adult males -

a) Aseptic meningitis

b) Encephalitis

c) Orchitis

d) Sinusitis

Correct Answer - C
Ans. is 'c' i.e., Orchitis
Orchitis is the most common manifestation of mumps among postpubertal males.

392. Incineration is done for waste category ?

a) Category 7

b) Category 9

c) Category 6

d) Category 5

Correct Answer - C
Ans. is 'c' i.e., Category 6

393. What is the route of administration of avian influenza vaccine?

a) Intranasal

b) Intramuscular

c) Subcutaneous

d) Intradermal

Correct Answer - B

Ans. is 'b' i.e., Intramuscular

Vaccine Avian Influenza:

- On April 17, 2007, FDA licensed the first vaccine in the United States for the prevention of H5N1 influenza, commonly referred to as avian influenza or "bird flu".
- This inactivated influenza virus vaccine is for use in people 18 through 64 years of age who are at increased risk of exposure to the H5N 1 influenza virus subtype contained in the vaccine.
- This vaccine is derived from the A/Vietnam/1203/2004 influenza virus.
- It is administered as a two-dose regimen. One 90 microgram dose is given intramuscularly, in the upper arm, and a second 90 microgram dose is given in the same manner, 28 days later.

394. Contraception with increased risk of actinomycosis ?

a) OCPs

b) Condom

c) IUCD

d) Vaginal

Correct Answer - C
Ans. is `c' i.e., IUCD

395. Healthy carrier are not seen in

a) Salmonella

b) Diphtheria

c) Measles

d) Cholera

Correct Answer - C
Ans. is 'c' i.e., Measles
The infectious agent is shed by the infected host as it multiplies in them but the host does not manifest signs of the disease.
Subclinical infection does not occur in measles

396. True about Indian reference female

a) Height 161 cm

b) Weight 60 kg.

c) BMI 22

d) None of the above

Correct Answer - A

Ans. is 'a' i.e., Height 161 cm

Reference man and woman

Energy intake recommendations are formulated for a *"reference man"* and a *"reference woman"* whose profiles are described, and then necessary adjustment are made for subjects deviate from he standard reference.

1.Indian reference man

- He is between *18-29 years* of age.
- He weights *60 kg.*
- His height is 1.73 meter and BMI is 20.3
- He is free from disease and physically fit for active work.
- On each working day he is *employed for 8 hours* in occupation that usually involves *moderate activity.*
- Spends 8 hours in bed, 4 to 6 hours sitting and moving around and 2 hours in walking and in active recreation or household duties.

2.An Indian reference woman

- She is between *18-29 years* of age
- She weights *55 kg.*
- Her height is 1.61 meter and BMI is 21.2
- She is engaged for *8 hours* in houshold work, in light industry or in other moderate activity.
- Spends 8 hours in bed, 4 to 6 hours sitting and moving around and 2

hours in walking and in active recreation or household duties.

397. Byssinosis is due to exposure of ?

a) Coal dust

b) Cotton dust

c) Sugarcane dust

d) Silica

Correct Answer - B
Ans. is 'b' i.e., Cotton dust
Byssinosis is due to exposure to *cotton dust* in *textile industries.*

398. Best epidemiological study is -

a) RCT

b) Meta-analysis

c) Cohort study

d) Case-control study

Correct Answer - B
Ans. is 'b' i.e., Meta-analysis
Here are the different epidemiological studies with decreasing order of accuracy to test the association between risk factor and disease :?
1. Systematic review and meta-analysis → Overall most reliable
2. Randomized controlled trials (controlled clinical trails) → Most reliable individual study.
3. Retrospective (Non-concurrent/historic) Cohort study.
4. Prospective (concurrent) Cohort study.
5. Case control study
6. Cross-sectional study
7. Ecological study

399. Secondary attack rate of chickenpox ?

a) 70%

b) 90%

c) 65%

d) 80%

Correct Answer - B
Ans. is `b' i.e., 9%

400. True about rash of chicken pox ?

a) Deep seated

b) Centripetal

c) Affects palm & sole

d) Slow evolution

Correct Answer - B
Ans. is 'b' i.e., Centripetal

401. Mortality rate in measles encephalitis is -

a) 1-2%

b) 10-20%

c) 20-30%

d) 30-40%

Correct Answer - B
Ans. is 'b i.e., 10-20%
"The mortality rate in encephalitis associated with measles is about 10-20 %" — Park
"Case fatality rate in acute measles encephalitis is 15%" wwwcdc.gov.

402. Mortality rate of measles in developing countries?

a) 10%

b) 20%

c) 30%

d) 40%

Correct Answer - A
Ans. is 'a' i.e., 10%
Measles-associated mortality is usually higher among the very young and very old.
Mortality in developing countries may be *as high as 10 to 15%* due to one or several factors, including the early age of infection, malnutrition, diarrhea, concomitant/secondary bacterial infections, and lack of access to good medical care.
Most common cause of death is pneumonia in children and encephalitis in adults.

403. Matching is not required in which epidemiological study?

a) Case control study

b) Cohort study

c) Case report

d) Randomized control trial

Correct Answer - C
Ans. is `c' i.e., Case report
Case report:
In medicine, a case report is a detailed report of the symptoms, signs, diagnosis, treatment, and follow-up of an individual patient. Case reports may contain a demographic profile of the patient, but usually describe an unusual or novel occurrence. Since it involves information on single case it does not require matching.
Others i. e. case control study, cohort study and randomized control trials are based on the comparative study of two groups.
To decrease the bias in the observations in the two groups under consideration it is essential that the groups be matched for all the characteristics except for the one under study. Thus matching is essential in these epidemiological studies.

404. Weight of an indian reference woman is ?

a) 45 kg

b) 50 kg

c) 55 kg

d) 60 kg

Correct Answer - C
Ans. is 'c' i.e., 55 kg

405. Missing cases are detected by ?

a) Active surveillance

b) Passive surveillance

c) Sentinel surveillance

d) Prevalence rate

Correct Answer - C

Ans. is 'c' i.e., Sentinel surveillance

Surveillance

- Surveillance is defined as *"the continous scrutiny of the factors that determine the occurrence and distribution of disease and other conditions of ill health".*
- Surveillance may be of following types :?

1) Passive surveillance

- Data is reported itself to health system, e.g. a patient (clinical case) is coming to a doctor.
- Most of the national health programmes in India rely on passive surveillance for data collection.

2) Active surveillance

- Data is collected actively by health system, e.g. collection of blood slides every fortnight from house to house to control malaria.
- Active surveillance in India is done in :-

1. *National leprosy elimination programme (modified leprosy elimination campaigns).*
2. *National vector Borne disease control programme (VVBDCP) e.g. malaria.*

3) Sentinel surveillance

- Sentinel surveillance helps in *identifying missing cases and supplementing notified cases.*

2. Sentinel surveillance in India is done in *national AIDS control programme.*

406. Study suitable for rare diseases ?

a) Cohort study

b) Case-control study

c) Both of the above

d) None of the above

Correct Answer - B
Ans. is 'b' i.e., Case-control study

407. In MCH programme, best indicator for mother and child health ?

a) MMR

b) IMR

c) Still birth rate

d) Neonatal mortality rate

Correct Answer - B
Ans. is 'b' i.e., IMR
IMR is best indicator for:-
1. Health status of a community.
2. Level of living.
3. *Effectiveness of MCH services.*

IMR is second best indicator of socioeconomic status of country (under 5 mortality rate is more refined indicator for socioeconomic status).

408. First ocular sign of Vitamin A deficiency ?

a) Bitot's spot

b) Conjunctival xerosis

c) Night blindness

d) Keratomalacia

Correct Answer - B
Ans. is 'b' i.e., Conjunctival xerosis

409. Quarantine period of cholera ?

a) 1 day

b) 2 days

c) 5 days

d) 10 days

Correct Answer - C
Ans. is 'c' i.e., 5 days

410. Endemic typhus is transmitted by ?

a) Louse

b) Fleac

c) Tick

d) Mite

Correct Answer - B
Ans. is 'b' i.e., Flea

411. An infectious disease shows iceberg phenomenon. That means it has ?

a) More case fatality rate

b) More SAR

c) More subclinical cases

d) More complications

Correct Answer - C

Ans. is 'C' i.e., More subclinical cases

Iceberg of disease

Disease in a community may be compared with an iceberg.

The floating tip of the iceberg represents what the physician sees in the community, i.e. clinical cases (Diagnosed case, symptomatic case of the clinically apparent case).

The vast submerged portion of the iceberg represents the hidden mass of disease, i.e. latent, inapparent, presymptomatic and undiagnosed cases and carriers in the community.

- The "waterline" represents the demarcation between apparent and inapparent disease.
- An epidemiologist is concerned with the hidden portion of the iceberg whereas the clinician is concerned with the tip of the iceberg.
- Screening is done for a Hidden portion of the iceberg whereas diagnosis is done for the tip of the iceberg.

The iceberg phenomenon of disease is not shown by Rabies, Tetanus, Rubella, and Measles.

The clinician concerned only with the tip of iceberg, i.e symptomatic cases that are seen in clinical treatment, this can result in inaccurate view of the nature and causes of a disease results because the

minority of the cases are studied (hidden cases:- submerged portion of iceberg is not studied) → Clinician's Fallacy

Diseases with a great deal of subclinical infection (therefore have iceberg phenomenon) are :

1. Polio
2. Japanese encephalitis
3. Influenza
4. Mumps
5. Hepatitis A and B
6. Diphtheria

412. Which of the following is not related to epidemiology ?

a) Promotion of health

b) Identification of etiology of disease

c) To collect data of magnitude of health problem

d) To teach a medical student how to conduct safe delivery

Correct Answer - D
Ans. is 'd' i.e., To teach a medical student how to conduct safe delivery
According to the International Epidemiological Association (IEA), epidemiology has three main aims :
a) To describe the distribution and magnitude of health and disease problems in human populations.
b) To identify aetiological factors (risk factors) in the pathogenesis of disease; and
c) To provide the data essential to the planning, implementation and evaluation of services for the prevention, control and treatment of disease and to the setting up of priorities among those services.
In order to fulfil these aims, three rather different classes of epidemiological studies may be mentioned : descriptive studies, analytical studies, and experimental or intervention studies.
The ultimate aim of epidemiology is to lead to effective action :
a) To eliminate or reduce the health problem or its consequences; and
b) To promote the health and well-being of society as a whole.

413. Most rapid diagnosis of pulmonary TB can be done by ?

a) Sputum culture

b) Sputum microscopy

c) Radiometric BACTEC method

d) Genexpert

Correct Answer - B
Ans. is 'b' i.e., Sputum microscopy

- *Sputum smear microscopy is the quickest and easiest procedure.* But it lacks both sensitivity and specificity.
- Sputum culture is sensitive and most specific. But it takes 2-8 weeks for culture on routine L.J. media (solid medium).
- M tuberculosis produces visible colonies on solid media (L.J. media) in 4-8 weeks.
- Studies have shown that the rate of Isolation of positive cultures was significantly faster with the Bactec method with 87% of the positives being obtained at 7 days and 96% by 14 days.
- Gene XPert should be used as the initial diagnostic test in individuals suspected of having MDR-TB or HIV-associated TB (strong recommendation)," and "Xpert may be used as a follow-on test to microscopy where MDR and/or HIV are of lesser concern, especially in smear-negative specimens (conditional recommendation).
  - The GeneXpert MTB/RIF assay is a novel integrated diagnostic device for the diagnosis of tuberculosis and rapid detection of RIF resistance in clinical specimens.

414. Which of the following anti-leprotic drug is not given under supervision ?

a) Rifampicin

b) Clofazimine

c) Dapsone

d) All are given supervised

Correct Answer - C
Ans. is 'c' i.e., Dapsone

415. Case fatality rate is a ?

a) Rate

b) Ratio

c) Proportion

d) None

Correct Answer - C
Ans. is 'c' i.e., Proportion

416. Daily dose of INH for TB ?

a) 600 mg

b) 300 mg

c) 150 mg

d) 1500 mg

Correct Answer - B
Ans. is 'b' i.e., 300 mg

417. RDA of vitamin A in an adolescent female ?

a) 400 mcg

b) 350 mcg

c) 600 mcg

d) 800 mcg

Correct Answer - C
Ans. is 'c' i.e., 600 mcg

418. Population attributable risk is defined as the difference between:

a) Incidence in exposed and incidence in non-exposed compared with incidence in non-exposed

b) Incidence in population and incidence in exposed compared with incidence in population

c) Incidence in population and incidence in non-exposed compared with incidence in population

d) Incidence in population and incidence in exposed compared with incidence in non-exposed

Correct Answer - C
Ans. c. Incidence in population and incidence in non-exposed compared with incidence in population
population attributable risk is defined as the difference between incidence in population and incidence in non-exposed compared with incidence in population.

419. Screening under RNTCP emphasizes on:

a) Sputum microscopy

b) Chest X-ray

c) PCR

d) Sputum culture

Correct Answer - A
Ans. a. Sputum microscopy
Over-reliance on chesl X-ray was a draw back of National Tuberculosis Programme (NTP) which was over come by Revised National Tuberculosis Control Programme(RNTCP) which started diagnosing patient by sputum microscopy
'A nation-wide network of RNTCP qaality assured designated sputum smear microscopy laboratories has been set
up, providing appropriate, available, affordable and accessible diagnostic services for TB suspects and cases.

420. Positive predictive value is a function of sensitivity,specificity and

a) Absolute risk

b) Relative risk

c) Incidence

d) Prevalence

Correct Answer - D
Ans. d. Prevalence
The predictive value of a positive result falls as the disease prevalence declines.
Positive Predictive Value

- In addition to sensitivity and specificity, the performance of a screening test is measured by its 'predictive value', which reflects the diagnostic power of the test.
- The predictive accuracy depends upon sensitivity, specificity and disease prevalence.
- The predictive value of a positive test indicates the probability that a patient with a positive test result, has, in fact, the disease in questions.
- The more prevalent a disease in the given population, the more accurate will be the predictive value of a positive screening test.
- The predictive value of a positive result falls as the disease prevalence declines

421. Consumer protection act includes all, except ?

a) Passed in 1986

b) Decision within 3-6 months

c) ESI hospitals not included

d) Right to safety

Correct Answer - C
Ans. is 'c' i.e., ESI hospitals not included
Consumer protection act

- For the first time in India, the *Consumer Protection Act 1986* provided consumers a forum for speedy redressal of their grievances against medical services.
- According to this act, the *decision should be taken within 3-6 months.*
- There is *no court fee payment* and the person can plead his own case.
- Recently even *ESI hospitals have been brought within the ambit* of this act.
- COPRA is a piece of comprehensive legislation and recognizes six rights of consumer:-

1. Right to safety
2. Right to be informed
3. Right to choose
4. Right to be heard
5. Right to seek redressal
6. Right to consumer education

- For medical negligence, complain can be given to MCI or can be filed in consumer court.

- MCI can take disciplinary action, e.g. temporary or permanent cancellation of registration of concerned doctor. But, MCI cannot punish a doctor or give a compensation.
- Consumer courts give compensation. The limits of consumer courts are:-

1. District consumer court → Up to Rs. 20 lacs.
2. State commission → Rs. 20 lacs to Rs. 1 crore.
3. National commission → Above Rs. 1 crore.

422. Father of Indian Surgery is ?

a) Dhanvantari

b) Charaka

c) Susruta

d) Atreya

Correct Answer - C
Ans. is 'c' i.e., Susruta

- Father of (Modern) Medicine : Hippocrates
- Father of Indian Medicine : Charaka
- Hindu God of Medicine : Dhanvantari
- Father of (Modern) Surgery : Ambroise Pare
- Father of Indian Surgery : Sushruta
- Father of Epidemiology/Modern Epidemiology : John Snow
- Father of Bacteriology : Louis Pasteur
- Father of Biology : Gregor Mendel
- Father of (Modern) Anatomy : Vesalius
- Father of Physiology : Claude Bernard
- Father of Psychoanalysis : Sigmund Freud
- Father of Homeopathy : Semuel Hahneman
- Father of Anti-sepsis : Joseph Lister

423. Threshold level of herd immunity for Pertussis is?

a) 80%

b) 70%

c) 90%

d) 50%

Correct Answer - C
Ans. is 'c' i.e., 90%

Herd immunity

- It is the level of resistance of a community or group of people to a particular disease.
- It occurs when the vaccination of a portion of the population (or herd) provides protection to unprotected (non? vaccinated) individuals.
- Advantage of herd immunity
- It is not necessary to achieve 100% immunization to control a disease by providing herd immunity.
- When a certain percentage of population, is vaccinated, the spread of disease is effectively stopped.
- This critical percentage is referred to as herd immunity threshold.

Disease		**Herd immunity threshod**
Diphtheria	→	85%
Measles	→	83-94%
Mumps	→	75-86%
Pertussis	→	92-94%
Polio	→	80-86%
Rubella	→	80-85%
Small pox	→	83-85%

424. "Second" most common cause of maternal mortality in India is ?

a) Toxemia

b) Anemia

c) Maternal hemmorrhage

d) Sepsis

Correct Answer - B
Ans. is 'b' i.e., Anemia
Most common cause → Severe bleeding (25%).
Second most common cause → Anemia (19%).
Third most common cause → Infection/Sepsis (15%).

Direct cause of maternal mortality in India

- Severe bleeding (25%)
- Infection (15%)
- Eclampsia (12%)
- Obstructed labour (8%)
- Unsafe abortion (13%)
- Other direct causes → Ectopic pregnancy, Embolism, Anaesthesia related.

Indirect causes contribute

- Anaemia (19%)
- Malaria
- Heart diseases

425. Most effective natural barrier to rabies

a) Heat

b) Humidity

c) Water

d) None

Correct Answer - C
Ans. is 'c' i.e., Water

- Rabies is primarily a zoonotic disease of warm-blooded animals, particularly carnivorous such as dogs, Cats, Jackals and wolves.
- It is transmitted to man usually by bites or licks of rabid animals.
- It is the communicable disease which is always fatal.
- Rabies is an enzootic and epizootic disease of world-wide importance.
- Geographic boundries play an important role in the distribution of rabies.
- Water appears to be the most effective natural barriers to rabies → So, In India, Lakshadweep and Andman & Nicobar islands are free of the disease.
- A Rabies free area has been defined as one in which no case of indigenously acquired rabies has occurred in man or any animal species for 2 years.
- Countries where rabies is not found → Australia, china (Taiwan), Cyprus, Iceland, Ireland, Malta, Japan, Newzealand, Britain.

426. A person is obese if he has weight for height

a) 1 SD from median weight for height

b) 2 SD from median weight for height

c) 3 SD form median weight for height

d) None

Correct Answer - B
Ans. is 'b' i.e., 2 SD from median weight for height
Obesity

- Obesity is a medical condition in which excess body fat has accumulated to the extent that it may have an adverse effect on health, leading to reduced life expectancy.
- Body mass index (BMI) is used to define obesity.
- BMI define a person overweight when his BMI is between 25 - 30 kg/m^2 and obese when his BMI is greater than 30 kg/m2.
- Body weight, though not an accurate measure of excess fat, is a widely used index.
- In epidemiological studies it is conventional to accept +2SD (standard deviations) from the median weight for height as a cut-of fpoint for obesity.

427. Polio case definition for AFP surveillance ?

a) Onset of AFP

b) Residual paralysis

c) Stool specimen positive for virus

d) All of the above

Correct Answer - D
Ans. is `d' i.e., All of the above

AFP Surveillance

- Acute flaccid paralysis (AFP) surveillance is carried out to identify all remaining infected areas, monitor progress towards eradication and target supplementary immunization appropriately.
- The term AFP means paralysis of acute onset involving limbs leading to flaccidity. Poliomyelitis is most important etiology of AFP, other causes are - GBS (Guillain-Barre syndrome), transverse myelitis and traumatic neuritis.
- AFP surveillance aims at detecting cases of AFP and reporting them immediately to district immunization officer.
- Surveillance is carried out for all cases of AFP and not just for poliomyelitis. All cases of AFP are reported, regardless of the final diagnosis. As paralytic poliomyelitis is one cause of AFP, maintaining a high sensitivity of AFP reporting will ensure that all cases of paralytic poliomyelitis are detected, reported and investigated, resulting in preventive central measures to interrupt the transmission of disease.
- The aim of AFP surveillance is to detect polio virus transmission, and the earlier the stool is collected, the greater the chance of detecting polio virus.

- WHO recommends the immediate reporting and investigation of every case of AFP in children less than 15 yrs (As AFP in a person > 15 yrs is unlikely to be polio. Still, AFP surveillance must be flexible enough to report any case of AFP in an adult, if suspected to be due to poliomyelitis)
- Cases ofAFP are classified as Polio if :
- Wild polio virus is isolated from any stool specimen.
- Cases of AFP without isolation of wild polio virus may be classified as 'polio compatible' if :
- Stool specimens were inadequate and
- Residual weakness was present 60 days after onset of paralysis or 60-day follow-up was not done (due to death or absence) and 'Expert review' concludes that these cases could not be discarded as 'non-polio' based on available data.

428. Service applied, staff recruitement, staff trained, Equipment ordered, equipment installed, product delivered which is the critical step

a) Staff recruitment

b) Staff trained

c) Equipment ordered

d) Equipment installed

Correct Answer - D
Ans. is 'd' i.e., Equipment installed

429. Which of the following is seen in the recovery phase after a disaster except

a) Rehabilitation

b) Reconstruction

c) Response

d) Preparedness

Correct Answer - D
Ans. is 'd' i.e., Preparedness
Disaster Management includes three aspects:
1. Disaster impact and response:
Search, rescue, and first-aid
• Field care
• Triage
• Tagging
• Identification of the dead
2. Rehabilitation or recovery:
• Water supply
• Basic sanitation and personal hygiene
• Food safety
• Vector control
3. Mitigation: Measures designed either to prevent hazards from causing disaster or to reduce the effects of the disaster. This also includes preparedness for any impending disasters or in disaster-prone areas.

430. Dowry prohibition act 1986, punishment is ?

a) Tyr, Rs 25000

b) Tyr Rs 15000

c) 5yr, Rs 25000

d) 5yr Rs 15000

Correct Answer - D
Ans. is 'd' i.e., 5yr Rs 15000

- According to "The Dowary Prohibition Act, 1961 (Amended 1986)", if any person violates the act may be punished with the imprisonment for a term not less than 5 years and with a fine which shall not less than Rs. 15000 or amount of the value of such dowry which ever is more.
- Also know
- According to section 304 B IPC, the punishment for dowry death is imprisonment for a term of minimum 7 years, which may be extended to life imprisomment.

431. Consumer protection act was passed in ?

a) 1977

b) 1986

c) 1993

d) 1998

Correct Answer - B
Ans. is 'b' i.e., 1986

- Consumer protection act was passed in 1986.

432. Natural family planning method ?

a) Abstinence

b) Coitus interruptus

c) BBT

d) Safe peroid

Correct Answer - C
Ans. is 'c' i.e., BBT

Miscellaneous methods of contraceptions

- These are (i) Abstinence, (ii) Coitus interruptus, (iii) Safe period (rhyth method), and (iv) Natural family planning methods.
- Abstinence
- There is complete abstinence from sexual intercourse. It is not used and can hardly be considered as a method of contraception to be advocated to the masses.
- Coitus interruptus
- It is the oldest method of voluntary fertility control. The male withdraws before ejaculation, and thereby tries to prevent deposition of semen into vagina. Failure rate is very high 25%.
- Natural family planning methods
- These are :?

1. Basal body temperature (BBT) method : It is based on the principle that there is rise BBT at or just before ovulation.
2. Cervical mucus method (Billings method or ovulation method) : It is based on the observation that at the time of ovulation cervical mucus becomes watery clear resembling raw egg white, smooth, slippery and profuse.
3. Symptothermic method : This method combines temperature, cervical mucus and safe period (calender method) methods.

433. Significant value of `p' is ?

a) 0.01

b) 0.02

c) 0.04

d) 0.05

Correct Answer - D
Ans. is 'd' i.e., 0.05

- P is the probability that the difference seen between 2 samples occurs due to chance".
- If p . .05 it is considered statistically significant.
- It means that
- There is 5% probability that the result could have been obtained by chance. or
- The investigator can be 95% sure that the result was not obtained by chance.

434. AIDS day is ?

a) 7 April

b) 3 May

c) 5 June

d) 1 December

Correct Answer - D
Ans. is 'd' i.e., 1 December

435. In rural area, cattle sheds should be ..... away from the houses ?

a) 5 feet

b) 10 feet

c) 20 feet

d) 25 feet

Correct Answer - D
Ans. is 'd' i.e., 25 feet

Rural housing

- In rural areas, the 'approved' standards may be lower than in towns.
- The following minimum standards have been suggested :
- There should be at least two living rooms.
- Ample verandah space may be provided.
- The built-up area should not exceed one-third of the total area.
- There should be a separate kitchen with a paved sink or platform for washing utensils.
- The house should be provided with a sanitary latrine.
- The window area should be at least 10 percent of the floor area.
- There should be a sanitary well or a tube well within a quarter of a mile from the house.
- It is insanitary to keep cattle and livestock in dwelling houses. Cattle sheds should be at least 25 feet away from dwelling houses. A cattle shed should be open on all sides; an area 8 fit 4 fit is sufficient for each head of cattle.
- There should be adequate arrangement for the disposal of waste water, refuse and garbage.

436. Operational efficiency of malaria control programme?

a) Infant parasite rate

b) Slide positivity rate

c) Mosquito bite rate

d) Annual blood examination rate

Correct Answer - D
Ans. is 'd' i.e., Annual blood examination rate
MEASUREMENTOFMALAR1A

- In the pre-eradication era, the magnitude of the malaria problem in a country used to be determined mostly from the reports of the clinically diagnosed malaria cases and the classical malariometric measures, e.g., spleen rate, parasite rate etc.
- On the other hand, during eradication era, the microscopic diagnosis of malaria cases became the main method of diagnosis and the parameters used are mostly parasitological in nature e.g., API, ABER, SPR and SFR.

Measurements of malaria in the pre eradication era

- Spleen rate:
- Defined as the percentage of children between 2 & 10 years of age showing enlargement of spleen. Spleen rate is widely used for measuring the endemicity of malaria in a community.
- Av. enlarged spleen :
- A refinement of spleen rate , denoting the average size of spleen.
- Parasite rate
- Defined as on the percentage of children between the ages of 2 & 10 yrs showing malarial parsites in their blood films.
- Parasite density index

- Average degree of parasitimia
- Infant parasite rate
- Percentage of infants showing malarial parasites in their blood films. It is the most sensitive index of recent transmission of malaria in a locality. If the infant parasite rate is zero for three consecutive years in a locality, it is regarded as absence of malaria transmission even though, the Anopheline vectors responsible for previous transmissions may remain.

Eradication Era

- Annual Parasite Incidence (API)* = (Confirmed cases during one year / population under surveillance) x 1000
- Annual Blood Examination Rate = (No. of slides examined/population) x 100
- ABER is an index of operational efficiency.
- In the modified plan of operation, the minimum prescribed is 10 percent of the population in a year.
- Annual falciparum index
- Slide positivity rate
- Slide positivity rate is the percentage of slides found positive for malarial parasite, irrespective of the type of species.
- Slide falciparum rate
- It is the percentage of slides positive for P. falciparum.

437. 2 months old child having birth weight 2kg, with poor feeding, very sleepy and wheezing. The diagnosis is?

a) No pneumonia

b) Severe pneumonia

c) Very severe disease

d) None

Correct Answer - C
Ans. is 'c' i.e., Very severe disease

438. Most common source of Diphtheria

a) Case

b) Carrier

c) Both

d) None

Correct Answer - B
Ans. is 'b' i.e., Carrier

- Diphtheria is an acute infectious disease caused by toxigenic strains of corynebacterium diphtheriae.
- Source of infection cases or carriers; carriers are common sources of infection, their ratio is estimated to be 95 carriers for 5 clinical cases.

Infective period → 14 - 28 days from the onset of disease.
Age group → 1 to 5 years
Sex → Both sexes
Incubation period → 2 - 6 days

439. All are features of yellow fever except ?

a) IP 3-6 days

b) 1 attack gives life long immunity

c) Caused by vector aedes

d) Validity of vaccination begins immediately after vaccination

Correct Answer - D

Ans. is 'd' i.e., Validity of vaccination begins immediately after vaccination

Yellow fever

- Yellow fever is a zoonotic disease caused by ar abro-virus.
- It affects principally monkeys.
- Agent → Flavivirus fibricus a group B arbovirus of togavirus family.
- Vector → Aedes aegypti mosquito.
- Reservoir → Monkeys and forest mosquitoes. Transavarian transmission of the virus in mosquitoes has been shown to occur in adverse conditions (e.g., during extended dry seasons), in the absence of susceptible hosts. o There is no evidence that yellow fever has ever been present in Asia.
- Environmental **factor for yellow fever.**
- A temprature of 24°C or more is required for the multiplication of the virus in the mosquito.
- It should be accompnied by a relative humidity of over 60% for the mosquitoes to live long.
- Urbanization is leading to extension of yellow fever in Africa.
- Measures designed to restrict the spread of yellow fever are specified in the "International health regulation" of WHO.
- These are implemented by the Govt of India through stringent aerial and maritime traffic regulations.

- Broadly these comprise : -

i. Travellers

- All travellers (including infants) exposed to yellow fever or passing through endemic zones of yellow fever must posses a valid international certificate fo vaccination against yellow fever before they are allowed to enter yellow fever receptive areas like India.
- The validity of the certificate begins 10 days after the date of vaccination and extends up to 10 years.
- Revaccination performed before the end of the validity of certicicate renders the certificate valid for a further period of 10 years starting on the day of revaccination.
- If no such certificate fo vaccination is available, the travellar is placed on quarantine for 6 days from the date of leaving an infected area.

ii. Mosquitoes

- The aircraft and ships arriving from endemic areas are subjected to aerosol spraying with prescribed insecticides.
- Airports and Seaports are kept free from the breeding of insect vectors over an area extending at least 400 metres around their perimeters.
- The "aedes aegypti index" is kept below 1.

440. Criteria for slaughter house ?

a) Glass area should be 25% of floor area

b) Window ledes sloped 25°

c) Doorways 1 meter high

d) None of the above

Correct Answer - A
Ans. is 'a' i.e., Glass area should be 25% of floor area

441. A patient had injury to right leg by road traffic accident and his leg was amputated. This is ?

a) Disease

b) Disability

c) Impairment

d) Handicap

Correct Answer - C
Ans. is 'c' i.e., Impairment

- Any loss of anatomical structure (e.g. loss of leg in this question) is called as impairment.
- According to WHO definitions,
- Disease: Any abnormal condition of an individual that impairs function
- Impairment: Any loss or abnormality of psychological, physiological or anatomical structure or function
- Disability: (Because of impairment,) any restriction or inability to perform an activity in a range considered normal for a human being
- Handicap: A disadvantage for a given individual, resulting from an impairment/disability, that limits/prevents fulfillment of a role considered normal (depending on age, sex, social, cultural factors) for that individual For example,

Event	Classification	Interpretation
Accident	Disease	Impairs function of a person
Loss of foot	Impairment	Loss of anatomical structure in the form of foot
Cannot Walk	Disability	Walking is a normal routine daily activity of a human being

Walk		of a human being
Unemployed	Handicap	Loses out his job because he cannot walk, so cannot fulfill his role in the society, i.e, earning for his family members

442. Unmet needs of contraception to met according to NFH S-3

a) Women < 20 years

b) Women after puperium

c) Women after 1' week delivery

d) After illegal abortion

Correct Answer - A

Ans. is 'a' i.e., Women < 20 years

- Many women who are sexually active would prefer to avoid pregnancy, but nevertheless are not using any method of contraception.
- These women are considered to have 'unmet need' for family planning.
- The concept is usually applied to married women.
- According to the National Family Health Survey-3, Unmet need for family planning is highest (27.1%) among women below 20 years age and is almost entirely for spacing the births rather than for limiting the births.
- It is also relatively high for women in age group 20-24 years (21.1%) with 75% need for spacing and 25% for limiting the birth.
- Unmet need for contraception among women aged 30 years and above are mostly for limiting birth.

Age group	**Unmet need of contraception for**
< 20 years	For spacing the birth
20-24 years	For spacing (75%) and for limiting birth (25%)
30 years	For limiting birth

443. Infectivity period of chickenpox is ?

a) 1 day before and 4 days after appearance of rash

b) 4 days before and 5 day after appearance of rash

c) Only when scab falls

d) Entire incubation period

Correct Answer - A

Ans. is 'a' i.e., 1 day before and 4 days after appearance of rash

Period of communicability:

- Chicken pox: 1 – 2 days before to 4 – 5 days after appearance of rash
- Measles: 4 days before to 5 days after appearance of rash
- Rubella: 7 days before symptoms to 7 days after appearance of rash
- Mumps: 4 – 6 days before symptoms to 7 days thereafter
- Influenza: 1 – 2 days before to 1 – 2 days after onset of symptoms
- Diphtheria: 14 – 28 days from disease onset
- Pertussis: 7 days after exposure to 3 weeks after paroxysmal stage
- Poliomyelitis: 7 – 10 days before and after onset of symptoms
- Hepatitis A: 2 weeks before to 1 week after onset of jaundice
- Hepatitis B: Till disappearance of HBs Ag & appearance of anti-HBs
- Meningococcal: Until absent from nasal and throat discharge
- Tuberculosis: As long as not treated

444. Gas causing green house effect ?

a) CO_2

b) Methane

c) Sulfur hexafluoride

d) All of the above

Correct Answer - D
Ans. is 'd' i.e., All of the above

445. All are present in mild dehydration, except ?

a) Thirst

b) Restlessness

c) Dry tongue

d) Normal BP

Correct Answer - C
Ans. is 'c' i.e., Dry tongue

446. 3 months old infant, no chest indrawing with respiratory rate 52/minute. Diagnosis is

a) No pneumonia

b) Pneumonia

c) Severe pneumonia

d) Very severe disease

Correct Answer - B
Ans. is 'b' i.e., Pneumonia
- This infant has:?
.. Fast breathing (.. 50 per minute between 2 months to 1 years).
2. No chest indrawing.
- Diagnosis is Pneumonia.

447. ORS required during first 4 hours in a 20 kg child?

a) 200-400 ml

b) 400-600 ml

c) 600-800 ml

d) 1200-2200 ml

Correct Answer - D

Ans. is 'd' i.e., 1200-2200 ml

- Weight between 16-29.9 kg → ORS requirment is 1200-2200 ml during first 4 hours.

Guidelines for ORS therapy during first four hours

Age	**< 4 mth**	**4- l 1 mths**	***1-2 yrs***	**2-4 yrs**	**5-14 yrs**	**15 yrs**
Weight (Kg)	< 5	5-7.9	8-10.9	11-15.9	16-29.9	30 or over
ORS (ml)	200-400	400-600	*600-800*	800-1200	1200-2200	2200-4000

448. Descending order of cancer prevalance in males?

a) Lung > oral > pharynx > esophagus

b) Oral > lung > pharynx > esophagus

c) Pharynx > lung > oral > esophagus

d) Esophagus > oral > stomach > lung

Correct Answer - B

Ans. is 'b' i.e., Oral > lung > pharynx > esophagus

- Most common cancer in males in India is oral cancer followed by lung cancer.
- *Cancers in decreasing order in males (in India) : Oral cavity > Lung > Pharynx > Esophagus > Stomach.*
- Note : Some textbooks have mentioned that lung cancer is the most common cancer in men in India, followed by oral cavity cancer as the 2"[4] most common cancer. But most of the textbooks have mentioned oral cavity as the most common site of cancer in men in India. So, according to me oral cavity is the most common site.
- Cancers in decreasing order in females (in India) : cervix > breast > ovary cavity > esophagus.

Most common cancer in males in India → Oro-pharyngeal Ca (Aero-digestive Ca).
Most common cancer in males in world → Lung Ca.
Most common cancer in females in India → Cervical cancer.
Most common cancer in females in world → Brast Ca.
Most common overall cancer in the world (combined male & female) → Lung cancer.
Most common cancer related death in males in India & in world →

Ca lung.
Most common cancer related death in females in India & in world
→ Breast cancer.

449. NSABP stands for ?

a) National surgical adjuvant for breast project

b) National surgical adjuvant for breast and bowel project

c) National surgical adjuvant for brain and breast

d) National surgical adjuvant for bowel and brain

Correct Answer - B
Ans. is 'b' i.e., National surgical adjuvant for breast and bowel project

- The *National Surgical Adjuvant Breast and Bowel Project (NSABP)* is a clinical trials cooperative group supported since its inception by national cancer institute (NCI).

450. According to 'Biomedical concept' health is

a) Relative absence of pain and discomfort

b) Absence of disease

c) A sound mind in sound body, in a sound family, in sound environment

d) None

Correct Answer - B

Ans. is 'b' i.e., Absence of disease

- According to biomedical concept health is defined as *"absence of disease",* and has the basis in the *"germ theory of disease"*

451. Spot map is used for ?

a) Local distribution of disease

b) Rural-urban variation

c) National variation

d) None

Correct Answer - A
Ans. is 'a' i.e., Local distribution of disease

- Inner and outer city variations in disease frequency are well known.
- These variations are best studied with the aid of "spot maps" or "shaded maps".
- These maps show at a glance areas of high and low frequency, the boundaries and distribution.
- For example, if the map shows "clustering" of cases, it may suggest a common source of infection or a common risk factor shared by all the cases.
- The classical example of use of spot maps was by John snow for cholera epidemic in 1854.

452. Screening is useful in disease which has?

a) Short lead time

b) Long lead time

c) Both a & b

d) No relation with lead time

Correct Answer - B
Ans. is 'b' i.e., Long lead time

453. Iron requirment in a normal mensturating adult female

a) 15 mg/day

b) 20 mg/day

c) 30 mg/day

d) 35 mg/day

Correct Answer - B
Ans. is 'b' i.e., 20 mg/day

454. The following is not a Nerve gas ?

a) Sarin

b) Tabun

c) Soman

d) Pyrolan

Correct Answer - D
Ans. is 'd' i.e., Pyrolan

- Nerve gases are a class of organophosphates that act by inhibiting enzyme acetylcholinesteraze, an enzyme that destroys acetylcholine.
- The classical examples are tabun, sarin, soman and cyclosarin.
- These are used as chemical weapons in wars, i.e. chemical warfare.

455. Moribund patient, triage color ?

a) Red

b) Black

c) Yellow

d) Green

Correct Answer - B
Ans. is 'b' i.e., Black

Triage

- When the quantity and severity of injuries overwhelm the operative capacity of health facilities, a different approach to medical treatment must be adopted.
- The usual principle of first come, first treated", is not followed in mass emergencies.
- Triage consists of rapidly classifying the injured and the likelyhood of their survival with prompt medical intervention.
- Higher priority is granted to victims whose immediate or long-term prognosis can be dramatically affected by simple intensive care.
- Moribund patients who require a great deal of attention, with questionable benefit have the lowest priority.
- The most common triage classification system used international is four colour code system.

Red	-,	High priority treatment or transfer
Yellow		Medium priority
Green		Ambulatory patients
Black		Dead or moribund patients

456. Disease not covered under Integrated disease surveillance project (IDSP) is ?

a) Meningococcal disease

b) Tuberculosis

c) Herpes zoster

d) Cholera

Correct Answer - C
Ans. is 'c' i.e., Herpes zoster
Integrated disease surveillance project (IDSP)

- IDSP is a decentralized *state based* surveillance system intended to detect early warning signals of impending outbreaks and helps initiate an effective response in a timely manner in urban and rural areas.
- It will also provide essential data to monitor progress of on-going disease control programme and help allocate health resources more efficiently.
- It is a 5 years project and was launched in November 2004.
- The core conditions under surveillance in IDSP are:
  A. Regular Surveillance
- Vector borne disease -[p] Malaria
- Water borne disease -3 Acute diarrheal disease (cholera), Typhoid
- Respiratory disease→ TB
- Vaccine preventable disease Measles
- Disease under eradication→ Polio
- Other conditions → Road traffic accidents
- Other inernational commitments Plague
- Unusual clinical syndromes *Men* ingoencephalitis, Respiratory distress, hemorrhagic fever

B. Sentinel surveillance

- STD/blood borne disease -p HIV/HBV, HCV, water quality monitoring
- Other conditions→ Outdoor air quality

C. Regular periodic surveys

- NCD risk factors → Anthropometry, Physical activity, BP, tobacco, nutrition

D. Additional state priorities

- Each state may identify up to five additional conditions for surveillance.
- These are (above described) are the conditions (diseases) which are under surveillance in IDSP. There are some clinical syndrome under surveillance in IDSP to pick up all priority diseases listed in regular surveillance (above)

.. Fever with or without localizing signs: Malaria, Typhoid, JE, Dengue, Measles
2. Cough more than 3 weeks: TB
3. Acute fluccid paralysis: Polio
4. Diarrhea: Cholera
5. Jaundice: Hepatitis, leptospirosis, Dengue, Malaria, Yellow fever
6. Unusual syndromes: Antrax, plague, emerging epidemics.

457. Performance of components of PQLI is counted between

a) -1 to +1

b) 0 to 1

c) 0 to 100

d) None

Correct Answer - C
Ans. is 'c' i.e., 0 to 100
The subjective component of well being-4 Quality of life

- While "level of living" is an objective component, "quality of life" comprises the individual's own subjective evaluation.
- The index for quality of life is *"Physical quality of life index (PQLI)".*
- The PQLI is an attempt to measure the quality of life or well-being of a country.
- Physical quality of life index consolidates three indicators*:?*

1. Literacy rate
2. Infant mortality rate
3. Life expectancy at age 1 year (LE)

- PQLI ranges from 0 to 100.
- For each component, the performance of individual countries is placed on a scale of 0 to 100, where 0 represents an absolutely defined worst performance and 100 represents an absolutely defined best performance.
- The composite index is calculated by averaging the three indicators, giving equal weight to each of them.
- The resulting PQLI thus also is scaled 0 to 100.

458. Type of sampling, if random sample is taken from a characteristic population, eg. Hindus, Muslims, Christians etc?

a) Simple random

b) Systemic random

c) Stratified random

d) Cluster

Correct Answer - C

Ans. is 'c' i.e., Stratified random

- Stratified random sampling is particularly useful where one is interested in analysing the data by a certain characteristic of the population, viz Hindus, Muslims, Christians, age group etc, - as we know these groups are not equally distributed in the population." ..... Park

Simple random sampling

- Simple random sampling, also, known as *'unrestricted random sampling';* is applicable for small, homogenous, readily available population and is used in clinical trials.
- In simple random sampling each individual is chosen randomly and entirely by chance.
- So, *each individual has the same probability of being chosen* at any stage during the sampling process.

For example : ?

- Let us assume you had a school with 1000 students, divided equally into boys and girls, and you wanted to select 100 of them for further study.
- You might put all their names in a bucket and then pull 100 names

out.

- Not only does each person have an equal chance of being selected, we can also easily calculate the probaility of a given person being chosen, since we know the sample size (n) and population (N) and it becomes a simple matter of division → n/N or 100/1000 = 0.10 (10%).
- This means that every student in the school has a 10% or 1 in 10 chance of being selected using this method.

Systematic random sampling

- In order to do systematic random sampling, the individuals in a population are arranged in a certain way (for example, alphabetically).
- A random starting point is selected and then every n^{th} (for example 10th or 15th) individual is selected for the sample.
- That is, after arranging the individuals in certain pattern (e.g., alpabetically) a starting point is chosen at random, and choices thereafter at regular intervals.
- For example, suppose you want to sample 8 houses from a street of 120 houses.
- 120/8 = 15, So every 15th house is chosen after a random starting point between 1 and 15.
- If the random starting point is 11, then the houses selected are→ 11, 26, 41, 56, 71, 86, 101, and 116.
- In contrast to simple random sampling, some houses have a larger selection probabily e.g., in this question 11, 26, 41, 56, 71, 86, 100 and 116.
- While the remaining number can not be selected.

Stratified random sampling

- When sub-populations vary considerably, it is advantageous to sample each subpopulation (stratum) independently.
- *Stratification* is the process of grouping members of the population into relative hemogenous subgroups before sampling.
- The strata should be mutually exclusive, every element in the population must be assigned to only one stratum.
- Then *systematic random sampling* method is applied within each stratum.
- Population → Stratification → Systematic random sampling →

Sample.

- This often improves the representativeness of the sample by reducing sampling error.
- For example, suppose in a population of 1000, sample of 100 is to be drawn for Hb estimation, first convert the population into homogenous striata (e.g., 700 males and 300 females), then draw 70 males and 30 females by doing systematic random sampling.

459. Tablet for supplementation of iron and folic acid for adult contains ?

a) 20 mg iron, 5001,tg folic aci

b) 40 mg iron, 250 folic acid

c) 100 mg iron, 500 lig folic acid

d) 100 mg iron, 100 hg folic acid

Correct Answer - C
Ans. is 'c' i.e., 100 mg iron, 500 jig folic acid

460. According to immunization schedule, children should receive influenza vaccine ?

a) 2 doses at 1 month interval

b) 3doses at 1month interval

c) 2 doses at one month interval with one booster dose later

d) None of the above

Correct Answer - C

Ans. is 'c' i.e., 2 doses at one month interval with one booster dose later

- 2 doses of vaccine, separated by an interval of 3-4 weeks are considered necessary to induce satisfactory antibodies level.
- The protective value is 70-90% and immunity lasts for 6-12 months.
- Revaccination on an annual basis is recommended.

Influenza vaccines

1. Killed vaccines

- 2 doses, 3-4 weeks apart, 0.5 ml (for age > 3 years), subcutaneous.
- 70-90% protective efficacy; duration 3-6 months.
- Is rarely associated with Guillain Barre Syndrome (GBS).

2.Live attenuated vaccines

- Stimulate local + systemic immunity.
- Antigenic variations presents difficulties in manufacture.

3.Newer vaccines

- Split - virus vaccine ..
- Also known as 'Sub-virion vaccine'
- Highly purified
- Lesser side effects

- Less antigenic - multiple injections required
- Useful for children o Neuraminidase - specific vaccine :
- Sub-unit vaccine containing N-antigen
- Permits subclinical infection - long lasting immunity
- Recombinant vaccine :
- Antigenic properties of virulent strain transferred to a less virulent strain.
- Contraindications to inactivated influenza vaccines :
- Severe allergy to chicken eggs
- History of hypersensitivity/anaphylactic reactions previously.
- Development of Guillain Bane Syndrome (GBS) within 6 weeks of vaccine.
- Infants less than 6 months age.
- Moderate-to-severe illness with fever

461. Most important feature to diagnose severe pneumonia?

a) Cyanosis

b) Chest indrawing

c) Nasal flaring

d) Fast breathing

Correct Answer - B
Ans. is 'b' i.e., Chest indrawing

- The only sign for severe pneumonia is chest indrawing

462. Infant mortality rate in India is, per 1000 live births?

a) 25

b) 34

c) 55

d) 60

Correct Answer - B
Ans. is `b' i.e.,34
The value for Mortality rate, infant (per 1,000 live births) in India was 37 as of 2015.
IMR of India has declined by three points (8% decline), from 37 per 1000 live births in 2015 to 34 per 1000 live births in 2016.

463. Sullivan's index indicates

a) Life free of disability

b) Pregnancy rate per HW

c) Hook worm eggs/gm of stool

d) Standard of living

Correct Answer - A
Ans. is 'a' i.e., Life free of disability
Sullivan's index

- Sullivan's index is the *expectation of life free of disability.*
- It is computed by subtracting from the life expectancy the probable duration of bed disability and inability to perform major activities.
- Sullivan's index = life expectancy— Duration ofbed disability & Inability to perform minor work
- It is a *direct* indicator of health and well being in a community.
- *t is one of the most advanced health indicators currently available.*

464. Which vaccine is contraindicated pregnancy

a) Cholera vaccine

b) Typhoid vaccine

c) Meningococcal vaccine

d) Measles vaccine

Correct Answer - D
Ans. is `d' i.e., Measles vaccine
As a rule of thumb the vaccination with live viral or bacterial vaccine is contraindicated in pregnancy.

- The important ones are : -
- Measles
- Mumps
- Poliomyelitis
- Rubella
- Yellow fever
- Varicella
- BCG

465. Juvenile justice act defines a juvenile which is

a) Male below 16 years

b) Female below 16 years

c) Male below 18 years

d) None of the above

Correct Answer - C
Ans. is 'c' i.e., Male below 18 years

466. Secondary level of prevention is important in all of the following except ?

a) Coronary heart disease

b) TB

c) Leprosy

d) None

Correct Answer - A
Ans. is 'a' i.e., Coronary heart disease

- For non-communicable disease (e.g. CHD), primordial prevention is best intervention.

467. If annual growth rate of a population is 1.5-2%, what number ofyears will be required to double the population?

a) 70-47 years

b) 47-35 years

c) 35-28 years

d) 28-23

Correct Answer - B
Ans. is 'b' i.e. 47-35 years

468. One PHC covers how much population in hilly area?

a) 10000

b) 20000

c) 30000

d) 50000

Correct Answer - B
Ans. is 'b' i.e., 20000

469. Most common cause of post-measles death ?

a) Diarrhea

b) RTI

c) SSPE

d) Myocarditis

Correct Answer - B
Ans. is 'b' i.e., RTI

- Respiratory tract infection (RTI) is the most common cause of death. "Pneumonia is the most common life-threatening complication"_____ Park

470. Shortest incubation period is of which infection ?

a) Chicken pox

b) Measles

c) Rubella

d) Influenza

Correct Answer - D
Ans. is 'd' i.e., Influenza

471. A person is considered as a case of tuberculosis if -

a) Has cough

b) Sputum positive

c) X-ray signs

d) Mantoux positive

Correct Answer - B

Ans. is `b' i.e., Sputum positive

- Case of tubuculosis is defined as, either any of the two : -

1. At least one sputum specimen positive for AFB or culture positive for M. Tuberculosis or RNTCP endorsed rapid diagnostic test positive for TB.
2. Diagnosed clinically as a case of TB without microbiologic confirmation, and initiated on ATT.

Some definitions of tuberculosis cases and treatment

- Case of tuberculosis : A patient in whom tuberculosis has been confirmed by bacteriology or diagnosed by a clinician.
- Sputum smear examination - Laboratory technique to screen sputum for tuberculosis, where acid fast bacilli (AFB) are stained red by the Ziehl Neelsen method, and then identified and counted using microscopy. Smear positive tuberculosis - At least one initial sputum smears positive for AFB or one AFB positive.
- Smear negative tuberculosis - At least two negative smears, but tuberculosis suggestive symptoms and X-ray abnormalities or positive culture.
- Adherence - Person takes appropriate drug regimen for required time (also known as compliance).
- New case - A patient with sputum positive pulmonary tuberculosis

who has never had treatment for tuberculosis or has taken anti - tuberculosis drugs for less than 4 weeks.

- Relapse - A patient who returns smear positive having previously been treated for tuberculosis and declared cured after the completion of his treatment.
- Failure case - A patient who was initially smear positive, who began treatment and who remained or became smear positive again at five months or later during the course of treatment.
- Return after default - A patient who returns sputum smear positive, after having left treatment for at least two months. Transfer in - A patient recorded in another administrative area register and transferred into another area to continue treatment (treatment results should be reported to the district where the patient was initially registered). Transfer out - A patient who has been transferred to another area register and treatment results are not known. Cured - Initially smear positive patient who completed treatment and had negative smear result on at least two occasions (one at treatment completion).
- Treatment completed - Initially smear negative patient who received full course of treatment, or smear positive who completed treatment, with negative smear at the end of initial phase, but no or only one negative smear during continuation and none at treatment end.
- Cohort - A group of patients in whom TB has been diagnosed, and who were registered for treatment during a specified time period (e.g. the cohort of new smear-positive cases registered in the calender year 2003). This group forms the denominator for calculating treatment outcomes. The sum of the treatment outcomes, plus any case for which no outcome is recorded (eg. still on treatment) should equal the number of cases registered.
- Case detection rate : - The case detection rate is calculated as the number of notification of new and relapse cases in a year divided by the estimated incidence of such cases in the same year

472. All of the following are anthropozoonosis except

a) Rabies

b) Plaque

c) Anthrax

d) Schistosomiasis

Correct Answer - D
Ans. is 'd' i.e., Schistosomiasis

Zoonoses

- Zoonoses are diseases and infections which are naturally transmitted between vertebrate animal and man.
- The zoonoses may be classified according to the direction of transmission of disease : ?

I. Anthropozoonoses

- Infection is transmitted to man from lower vertebrate animals.
- Examples -4 *Rabies, plague, hydatid disease, anthrax, trichinosis.*

2. Zoonthroponoses

- Infection is transmitted from man to lower vertebrate animals
- Examples → *Human tuberculosis in cattle*

3. Amphixenoses

- Infection is maintained in both man and lower vertebrate animals that may be transmitted in either direction.
- Examples T cruzi, S. japonicum.

473. Night blood survey is done in ?

a) Filaria

b) Typhoid

c) Malaria

d) Kala-azar

Correct Answer - A
Ans. is 'a' i.e., Filaria

- The microfilariae of W. bancrofti and B. malayi occuring in India display a nocturnal periodicity, i.e., they appear in large number at night and retreat from the blood stream during the day.
- This is a biological adaptation to the nocturnal biting habits of vector mosquitoes.
- The maximum density of microfilariae in blood is reported between 10 pm and 2am.
- When the sleeping habits of the host are altered, a reversal in periodicity has been observed

474. Population explosion (explosive growth) is defined as the growth rate ?

a) 0.5-1.0

b) 1-1.5

c) 1.5-2

d) > 2

Correct Answer - D
Ans. is `d' i.e., > 2

Rate/Phase	Annual rate of growth in %
Stationary population	No growth <5
Slow growth	0.5 to 0.1
Moderate growth	1.0 to 1.5
Rapid growth	1.5 to 2.0
Very Raped growth	> 2.0
Explosive growth	

475. Protein content in 100 grams of cow milk

a) 4.3

b) 3.2

c) 2.2

d) 1.2

Correct Answer - B
Ans. is 'b' i.e., 3.2

476. One criteria for prudent diet?

a) Fat intake 35-40% of total energy

b) Dietary cholesterole < 300 mg/1000Kcal per day

c) Salt intake <10 g/day

d) Saturated futs < 10% of total energy

Correct Answer - D

Ans. is 'd' i.e., Saturated fats < 10% of total energy

Dietary goals prescribed by WHO expert committee prudent diet

- 3 Dietary modification is the principal preventive strategy in the prevention of CHD. The WHO Expert Committee (1) considered the following dietary changes to be appropriate for high incidence populations.
- Reduction of fat intake to 20-30 percent of total energy intake
- Consumption of saturated fats must be limited to less than 10 percent of total energy intake, some of the reduction in saturated fat may be made up by mono and poly-unsaturated fats.
- A reduction of dietary cholesterol to below 100 mg per 1000 kcal per day.
- An increase in complex carbohydrate consumption (i.e. vegetables, fruits, whole grains and legumes)
- Avoidance of alcohol consumption, reduction of salt intake to 5 g daily or less.

Other specific interventions as part of primordial prevention of coronary heart disease

- To achieve a smoke free society
- Reduction of Blood pressure through prudent diet. Regular exercise, weight control & cessation of smoking.

- Regular Physical Activity.

477. If a claw hand develops in a patient with Leprosy, th deformity is ?

a) Grade 0

b) Grade I

c) Grade II

d) Grade III

Correct Answer - C
Ans. is `c' i.e., Grade **II**

478. All of the following are required more during lactation as compared to pregnancy, except ?

a) Iron

b) Vitamin A

c) Niacin

d) Energy

Correct Answer - A
Ans. is 'a' i.e., Iron

- Required more during lactation as compared to pregnancy : Energy, Vitamin A, thiamin, riboflavin, Vitamin C, niacin, and Vitamin B12.
- Required more during pregnancy : Iron, protein, and folate.
- Same requirment in pregnancy and lactation : Fat, calcium, zinc, magnesium, and vitamin B6.

479. All of the following are related to plague except ?

a) Aedes aegypti index

b) Total flea index

c) Burrow index

d) Cheopis index

Correct Answer - A

Ans. is 'a' i.e., Aedes aegypti index

- Aedes aegypti index is used for yellow fever.
- In plague, flea indices are used.

Flea indices

- Flea indices are useful measurments of the density of fleas.
- They are also useful in evaluating the efectiveness of a spraying programme.
- The following indices are widely used in rat flea surveys : -

1. Total flea index → It is the average number of fleas of all species per rat.
2. Cheopis index → It is the average number of X. cheopis per rat. It is a specific flea index, so it is a more significant index than total flea index. If this index is more than one, it is regarded as indicative of potential explosiveness of the situation, should a plague outbreak occur.
3. Specific percentage of fleas → It is the percentage of different species of fleas that are found on rats.
4. Burrow index → It is the average number of free - living fleas per species per rodent burrow.

480. Drug for prophylaxis of malaria in chloroquine resistant P.falciparum ?

a) Mefloquine

b) Quinine

c) Halofantrine

d) Artesunate

Correct Answer - A
Ans. is 'a' i.e., Mefloquine
Chemoprophylaxis of malaria

- Chemoprophylaxis is recommended for travellers from non-endemic areas, and as a short term measure for soldiers, police and labour forces serving in highly endemic areas.
- Chemoprophylaxis should begin a week before arrival in malarious area and continued for at least 4 weeks or preferably 6 weeks after leaving malarious area.
- Drugs used are : ?

Chloroquine → DOC for chemoprophylaxis in chloroquine sensitive P. falciparum areas.
Atovaquone/Proguanil → Used in areas with chloroquine or mefloquine resistant P. falciparum.
Doxycycline → Used in areas with chloroquine or mefloquine resistant P. falciparum.
Mefloquine → Used in areas with chloroquine resistant P. falciparum
Hydroxychloroquine → Alternative to chloroquine in areas with chloroquine sensitive P. falciparum

481. An Englishman travels to a place which isresistant to chloroquine and mefloquine. What should he take as prophylaxis ?

a) Primaquine

b) Hydrchlorquine

c) Proguanil

d) Artesunate

Correct Answer - C
Ans. is 'c' i.e., Proguanil

482. Annual infection rate of tuberculosis is defined as ?

a) Percentage of total patients positive for tuberculin test

b) Percentage of new patients positive for tuberculin test

c) Percentage of sputum positive total patients

d) Percentage of sputum positive new patients

Correct Answer - B

Ans. is 'b' i.e., Percentage of new patients positive for tuberculin test

Epidemiological indices of tuberculosis

- Indices or parameters are needed to measure the tuberculosis problem in a community as well as for planning and evaluation of control measures.
- The following epidemiological-indices are used in tuberculosis problem measurement and programme strategy :?

1. Prevalence of infection

- It is the percentage of individuals who show a positive reaction to the standard tuberculin test.

2. Incidence of infection (Annual infection rate)

- It is the percentage of population under study who will be newly infected by M.tuberculosis among the non-infected of the preceding survey during the course of one year.
- It reflects the annual risk of being infected (or reinfected) in a given community, i.e. it expresses the attacking force of tuberculosis in a community.
- It is also known as tuberculin conversion index.
- This parameter is considered one of the best indicators for evaluating the tuberculosis problem and its trend.

3. Prevalence of disease or case rate

- It is the percentage of individuals whose sputum is *positive for tubercle bacilli on microscopic examination.*
- It is the best available practical index to estimate the number of infectious cases or case load in a community.

4. Incidence of new cases

- It is the percentage of new TB cases (confirmed by bacteriological examination) per 1000 population occurring during one year.

5. Prevalence of suspected cases

- This is based on X-ray examination of chest.

6. Prevalence of drug resistant cases

- It is the prevalence of patient excreting tubercle bacilli resistant to anti-tubercular drugs.

7. Mortality rate

- The number of deaths from tuberculosis every year per 1,000 population.

In this question

- Option a → Prevalance of infection.
- Option b → Incidence of infection (annual infection rate).
- Option c → Prevalance of disease (case rate)
- Option d → Incidence of disease.

483. Present "General fertility rates" ?

a) 84

b) 118

c) 128

d) 138

Correct Answer - A
Ans. is 'a' i.e., 84

484. D.latum transmitted by ?

a) Cercaria through cyclops

b) Cercaria through fish meal

c) Plerocercoid through fish meal

d) Metacercaria in cyclops

Correct Answer - C
Ans. is 'c' i.e., Plerocercoid through fish meal

485. Patterns of Inter-relationships between persons in a society is ?

a) Social structure

b) Social psychology

c) Herd structure

d) Social science

Correct Answer - A
Ans. **is** 'a' i.e., Social structure

- Patterns of inter-relationships between persons in a society is called social structure. Note - Study of human inter-relationship is called sociology.

486. Rash is absent in ?

a) Scrub typhus

b) Epidemic typhus

c) Q. fever

d) Endemic typhus

Correct Answer - C
Ans. is 'C' i.e., Q. fever
Q fever is caused by the bacterium Coxiella burnetii, commonly found in sheep, goats and cattle. The bacterium can also infect pets, including cats, dogs and rabbits.
These animals transmit the bacteria through their urine, feces, milk and birthing products — such as the placenta and amniotic fluid. When these substances dry, the bacteria in them become part of the barnyard dust that floats in the air. The infection is usually transmitted to humans through their lungs, when they inhale contaminated barnyard dust,the organism can also gain entry into the body,through abrasions,conjuctivae or ingestion of contaminated food.
Q fever is usually a mild disease with flu-like symptoms.In acute onset fever,chills,general malaise and headache ,There is no rash or local lesion.
Rare complications includes
Endocarditis. endocarditis can severely damage your heart valves. Endocarditis is the most deadly of Q fever's complications.
Lung issues. Some people who have Q fever develop pneumonia. This can lead to acute respiratory distress.
Liver damage. Some people who have Q fever develop hepatitis.
Encephalitis.
Prevention can be done by Pasteurisation

Prevention can be done by Pasteurisation

487. Minimum contact period required during Chlorination?

a) 30 minutes

b) 1 hrs.

c) 2 hrs

d) 4 hrs

Correct Answer - B
Ans. is 'b' i.e., 1 hrs.
Principles of chlorination

- Water should be clear and free from turbidity. Turbidity impedes efficient chlorination.
- The chlorine demand of the water should be estimated. It is the amount of chlorine that is needed to destroy bacteria and to oxidize all the organic matter and ammoniacal substances present in water. Chlorine demand of water is the difference between the amount of chlorine added to the water and the amount of residual chlorine remaining at the end of a specific period of contact (usually 60 minutes) at a given temperature and pH of the water.
- The point at which the chlorine demand of the water is met is called breakpoint chlorination. If further chlorine is added beyond breakpoint, free chlorine begins to appear in water.
- The presence of free residual chlorine for a contact period of at least one hour is essential to kill bacteria and viruses.
- The minimum recommended concentration of free chlorine is 0.5mg/l for one hour. This free residual chlorine provides a margin of safety against subsequent microbial contamination.
- The sum of the chlorine demand of the specific water plus the free residual chlorine of .5 mg/L constitutes the correct dose of chlorine

to be applied.

- It is worth noting here that recommended residual chlorine level for drinking water is 0.5 mg/ litre, while for swimming pool sanitation it is 1.0 mg/ litre and for water bodies & post disaster it is 0.7 mg/litre.

488. Sandfly transmits all, except ?

a) Oriental sore

b) Leishmaniasis

c) Kala-azar

d) Relapsing fever

Correct Answer - D
Ans. is 'd' i.e., Relapsing fever
Sandfly*:?*

- Habitats: Holes and crevices in walls, holes in trees, dark rooms, stables, and storerooms.
- Sanitation measures are carried out for a distance of 50 feet.
- Insecticide of choice: DDT (1 -2 gm/m2 single application)
- DDT is sprayed up to a height of 4 - 6 feet of walls[Q]: as Sandfly cannot fly, it only hops

Sandfly

Sandfly species	Diseases transmitted
Phlebotomus argentipes	Kala-azar (Visceral Leishmaniasis)
Phlebotomus papatasi	Sandfly fever, Oriental sore (Cutaneous Leishmaniasis)
Phlebotomus sergenti	Oriental sore (Cutaneous Leishmaniasis)
Sergentomyia punjabensis	Sandfly fever

489. Antiserum is available for passive immunization against ?

a) Rabies

b) Typhoid

c) Meales

d) Mumps

Correct Answer - A
Ans. is 'a' i.e., Rabies
For passive immunization
A. Antiserum
- Rabies
- Tetanus
- Diphtheria

B. Human normal immunoglobulins
- Rabies
- Tetanus
- Hepatitis A
- Measles
- Mumps

C. Human specific immunoglobulins
- Diphtheria
- Hepatitis B
- Varicella

490. Oncherciasis elimination, operational definition ?

a) O.volvulus transmission has reduced below a particular point

b) Intervention has stoped

c) No recrudescence

d) All of the above

Correct Answer - D
Ans. is 'd' i.e., All of the above
Oncherciasis elimination

- The reduction of infection and transmission to the extent that interventions can be stopped, but post-intervention surveillance is still necessary.
- Operational definition includes ?
- Intervention have reduced O.volvulus infection and transmission below the point where the parasite population is beilved to be irreversibly moving to its demise/extinction in a defined geographical area.
- Intervention have been stopped.
- Post-interventional surveillance for an appropriate period has demonstrated no recrudescence of transmission to a level suggesting recovery of O.volvulus population.
- Additional surveillance is still necessary for timely detection of recurrent infection, if a risk of reintroduction of infection from other area remains.

491. In ESI progamme central, state, Govt. employee contribute to the fund. Employer's contribution is ?

a) 5.75%

b) 4.75 %

c) 3.75%

d) 2.75%

Correct Answer - B
Ans. is 'b' i.e., 4.75%
Finance of ESI scheme

- The scheme is run by contribution by employees and employers and grants from central and state governments -

1. Employers contribution → 4.75% of total wages bills
2. Employee contribution → 1.75% of total wages bills
3. The state government's share of expenditure on medical care is $^1/_8$ of total cost of medical care.
4. The ESI corporations share of expenditure on medical care is 7_8 of total cost of medical care. Note - Employees getting daily wages of below Rs 50 are exempted from payment contribution.

492. All insects have developed resistance to DDT except?

a) Mosquito

b) Flea

c) Tsetse flies

d) Ticks

Correct Answer - C
Ans. is 'c' i.e., Tsetse flies
Arthropods showing resistance to DDT → Arthropods showing no resistance to DDT

Houseflies (e.g., Musca domestica)	Sandlies (Phlebotomus)
Moquito (Culex, Anopheles, Aedes)	Tsetse flies (Gluossianae)
Flea (rat flea, Sand flea)	
Lice (Pediculus capitis/corporis, Phthirus pubis)	
Ticks & Mites	

493. Highest level of health care system in India -

a) Primary health care

b) Secondary health care

c) Tertiary health care

d) All are same

Correct Answer - C
Ans. is 'c' i.e., Tertirary health care
Levels of health care

- It is customary to describe health care service at 3 levels, viz. primary, secondary and tertiary care levels. o These levels represent different types of care involving varying degrees of complexity.

1. Primary care level

- It is the first level of contact of individuals, the family and community with the national health system, where "primary health care", ("essential" health care) is provided.
- As a level of care, it is close to the people, where most of their health problems can be dealt with and resolved.
- It is at this level that health care will be most effective within the context of the area's needs and limitations.
- In India, primary health care is provided by PHC and their subcentres through the agency of multipurose health workers, village health guides and trained dais.

2. Secondary care level

- The next higher level of care is the secondary (intermediate) health care level.
- At this level more complex problems are dealth with.
- In India, this kind of care is generally provided in district hospitals

and community health centres which also serve as the first referral level.

3. Tertiary care level

- The tertiary level is a more specialized level than secondary care level and requires specific facilities and attention of highly specialized health workers.
- This care is provided by the regional or central level institutions, e.g,. Medical College Hospitals, All India Institutes, Regional Hospitals, Specialized Hospitals and other Apex Institutions

494. Most basic level of Health Care System in India -

a) Primary health care

b) Secondary health care

c) Tertiary health care

d) All are same

Correct Answer - A
Ans. is 'a' i.e., Primary health care

495. Pre-exposure prophylaxis dose schedule for rabies vaccine given in all days except ?

a) Day 0

b) Day 3

c) Day 7

d) Day 28

Correct Answer - B
Ans. is 'b' i.e., Day 3

Prevention of rabies

- Prevention of rabies may be of following types
- Post exposure prophylaxis
- Preexposure prophylaxis
- Post-exposure treatment of persons who have been vaccinated previously.

Schedules of vaccination for post exposure prophylaxis

A. Intramuscular schedules

- Routine shedule→ 6 doses on 0, 3, 7, 14 and 28 days with a booster on day 90.
- Abbreviated multisite schedule -4 2-1-1 regimen one dose is given in the right arm and one in left arm on day 0 after that one dose is given on day 7 and 21.

B. Intradremal schedules

- 2-site intradermal schedule One dose of vaccine is given at each of two sites on days 0, 3, 7 and 28.
- 8-site intradermal schedule→ On day "0" vaccine is give at 8 sites, on day 7 vaccine is given at 4 sites, and on days 28 and 90 vaccine

is given at one site.

Pre-exposure prophylaxis

- Persons who run a high risk of repeated exposure such as laboratory staff working with rabies virus, veterinarian, animal handlers and wild -life officers should be protected by pre-exposure immunization.
- Cell-culture vaccine given on days 0, 7 and 21 or 28 (Total 3 doses)
- Further booster should be given at intervals of 2 years.

In post-exposure prophylaxis of immunized patient

- 2 day intradermal regimen (1 site) → Day 0 and day 3
- Intramuscular regimen → Day 0
- 4 site intradermal regimen_ (single-visit) → Day 0

496. Encephalopathy can occur as complication of which vaccine ?

a) OPV

b) Rubella

c) Measles

d) BCG

Correct Answer - C
Ans. is 'c' i.e., Measles

497. Population pyramid indicates ?

a) Life expectancy

b) Fertility pattern

c) Sex ratio

d) All of the above

Correct Answer - D
Ans. is 'd' i.e., All of the above

Population pyramid

- The age and sex distribution of a population is best represented by population pyramid
- In countries with high birth rates as ours, it is broad based conical pyramid because of high birth rate and tapering of population with increase in age.
- In developed countries with low birth rate, the pyramid swells in the middle and is narrow at the base and is not so conical at the top. *(dumb bell shaped).*

Utility of population pyramid

- Shape of population pyramid indicates fertility pattern
  - Broad base, Narrow top (upright triangle): High proportion of younger population (developing countries)
  - Bulge in Middle: High proportion of adults (developed countries)
- Span (height) of population pyramid indicates life expectancy
  - Taller pyramid: Higher life expectancy (developed countries)
  - Shorter pyramid: Lower life expectancy (developing countries)
- Symmetry of population pyramid indicates sex ratio
  - Symmetric pyramid: ideal sex ratio (developed countries)
  - Asymmetric pyramid: unfavourable sex ratio <1000 (developing countries)

498. Green colour of triage is for which patient ?

a) Low priority

b) Morbidity

c) Ambulatory

d) High priority

Correct Answer - C

Ans. C. Ambulatory

Triage

- When the quantity and severity of injuries overwhelm the operative capacity of health facilities, a different approach to medical treatment must be adopted.
- The usual principle of first come, first treated", is not followed in mass emergencies.
- Triage consists of rapidly classifying the injured and the likelihood of their survival with prompt medical intervention.
- Higher priority is granted to victims whose immediate or long-term prognosis can be dramatically affected by simple intensive care.
- Moribund patients who require a great deal of attention, with questionable benefit have the lowest priority.
- The most common triage classification system used international is four colour code system.

Red	High priority treatment or transfer
Yellow	Medium priority
Green	Ambulatory patients
Black	Dead or moribund patients

499. Concurrent list of Indian Constitution includes which of the following?

a) International immigration rule for quarantine

b) Prevention of extension of communicable disease from one unit to another

c) Mines and oilfield workers rules

d) Establishment and maintenance of drug standards

Correct Answer - B
Ans. B. Prevention of extension of communicable disease from one unit to another
The functions of the Union Health Ministry are set out in the seventh schedule of Article 246 of the constitution of India under three lists.
1. Union List
2. Concurrent List
3. State list
The 52 items currently on the Concurrent list are:
1. Criminal law, including all matters included in the Indian Penal Code
2. Criminal procedure, including all matters included in the Code of Criminal Procedure .
3. Preventive detention for reasons connected with the security of a State, the maintenance of public order, or the maintenance of supplies and services essential to the community; persons subjected to such detention.
4. Removal from one State to another State of prisoners, accused persons and persons subjected to preventive detention for reasons specified in Entry 3 of this list.
5. Marriage and divorce; infants and minors; adoption; wills,

intestacy and succession; joint family and partition; all matters in respect of which parties in judicial proceedings were immediately before the commencement of this Constitution subject to their personal law.
6. Transfer of property other than agricultural land; registration of deeds and documents.
7. Contracts including partnership, agency, contracts of carriage, and other special forms of contracts, but not including contracts relating to agricultural land.
8. Actionable wrongs
9. Bankruptcy and insolvency.
10. Trust and Trustees.
11. Administrators – general and official trustees.
11-A. Administration of justice; constitution and Organisation of all courts, except the Supreme Court and the High Courts.
12. Evidence and oaths; recognition of laws, public acts and records, and judicial proceedings.
13. Civil procedure, including all matters included in the Code of Civil Procedure at the commencement of this Constitution, limitation and arbitration.
14. Contempt of court, but not including contempt of the Supreme Court.
15. Vagrancy; nomadic and migratory tribes.
16. Lunacy and mental deficiency, including places for the reception or treatment of lunatics and mental deficients.
17. Prevention of cruelty to animals.
17-A. Forests.
17-B. Protection of wild animals and birds.
18. Adulteration of foodstuffs and other goods.
19. Drugs and poisons, subject to the provisions of Entry 59 of List I with respect to opium.
20. Economic and social planning.
20-A. Population control and family planning.
21. Commercial and industrial monopolies, combines and trusts.
22. Trade unions; industrial and labour disputes.
23. Social security and social insurance; employment and unemployment.

24. Welfare of labour including conditions of work, provident funds, employers' liability, workmen's compensation, invalidity and old age pensions and maternity benefits.
25. Education, including technical education, medical education and universities, subject to the provisions of Entries 63, 64, 65 and 66 of List I; vocational and technical training of labour.
26. Legal, medical and other professions.
27. Relief and rehabilitation of persons displaced from their original place of residence by reason of the setting up of the Dominions of India and Pakistan.
28. Charities and charitable institutions, charitable and religious endowments and religious institutions.
29. Prevention of the extension from one State to another of infectious or contagious diseases or pests affecting men, animals or plants.
30. Vital statistics including registration of births and deaths.
31. Ports other than those declared by or under law made by Parliament or existing law to be major ports.
32. Shipping and navigation on inland waterways as regards mechanically propelled vessels, and the rule of the road on such waterways, and the carriage of passengers and goods on inland waterways subject to the provisions of List I with respect to national waterways.
33. Trade and commerce in, and the production, supply and distribution of,-
(a) the products of any industry where the control of such industry by the Union is declared by Parliament by law to be expedient in the public interest, and imported goods of the same kind as such products
(b) foodstuffs, including edible oilseeds and oils
(c) cattle fodder, including oilcakes and other concentrates
(d) raw cotton, whether ginned or not ginned, and cotton seed; and
(e) raw jute.
33-A. Weights and measures except establishment of standards.
34. Price control.
35. Mechanically propelled vehicles including the principles on which taxes on such vehicles are to be levied.

36. Factories.
37. Boilers.
38. Electricity.
39. Newspapers, books and printing presses.
40. Archaeological sites and remains other than those declared by or under law made by Parliament to be of national importance.
41. Custody, management and disposal of property (including agricultural land) declared by law to be evacuee property.
42. Acquisition and requisitioning of property.
43. Recovery in a State of claims in respect of taxes and other public demands, including arrears of land-revenue and sums recoverable as such arrears, arising outside that State.
44. Stamp duties other than duties or fees collected by means of judicial stamps, but not including rates of stamp duty.
45. Inquiries and statistics for the purposes of any of the matters specified in List II or List III.
46. Jurisdiction and powers of all courts, except the Supreme Court, with respect to any of the matters in this List.
47. Fees in respect of any of the matters in this List, but not including fees taken in any court.

500. Last point where reproductive and child health programme are include :

a) Sub-centre

b) Anganwadi

c) District

d) Taluka

Correct Answer - C
Ans.C. District
The various activities of Reproductive and child Health Programme (RCH) arc targeted at the district level.
“The RCH programme is based on a di iThrential approach. Inputs in all the districts have not been kept uniform.
While the care component are the same for all districts, the weaker districts will get more support and sophisticated facilities are proposed for relatively advanced districts. On the basis of crude birth rate and female literacy rate – all the districts have been divided into three categories ‘A, B, & C’ All the districts will be covered in a phased manner over a period of three years.”

501. Diagnostic power of a test to correctly diagnose a disease is-

a) Negative predictive value

b) Positive predictive value

c) Sensitivity

d) Specificity

Correct Answer - B
Ans.B. Positive predictive value

- Positive predictive value is the ability of a test to correctly diagnose the proportion of cases in which persons with a positive screening test result have the disease in question.
- Negative predictive value is the proportion of cases in which people with negative test result do not have the disease in question.
- Sensitivity is defined as the ability of the test to identify correctly all those who have the disease, i.e. true positive.
- Specificity is defined as the ability of the test to identify correctly those who do not have the disease, i.e. true negative.

502. Paradoxical carriers are-

a) A person who acquires the microorganism due to his contact with the patient.

b) A person who acquires the microorganism another carrier.

c) A person who is clinically recovered from an infectious disease but still capable of transmitting the infectious agent to others.

d) None

Correct Answer - B
Ans. B.A person who acquires the microorganism another carrier.
Paradoxical carrier are defined as person who acquires the microorganism another carrier.

503. According to IMNCI, a baby of 6 month age, criteria for fast breathing is more than _____/min

a) 60

b) 50

c) 40

d) 30

Correct Answer - B
Ans. B. 50
As the children get older, their breathing rate slows down. Therefore, the cut-off point has fast breathing will depend on the age of the child. o Fast breathing is present when the respiratory rate is :?

- Child less than 2 months of age : 60 breaths per minute
- Child aged 2 months upto 12 months:50 breaths per minute
- Child aged 12 months upto 5 years : 40 breaths per minute

504. All of the following are examples of Dietary fibre except-

a) Pectin

b) Lignin

c) Cellulose

d) Gums

Correct Answer - D

Ans. D. Gums

- Dietary fibre consists of unabsorbable cell wall and other constituents of vegetable food like cellulose, lignin, hemicellulose, gums, pectins, glycoproteins and other polysaccharides.
- Dietary fibre absorbs water in the intestine, swells, increase bulk of stood by increasing water content of faeces and soften it, decreases transit time by facilitating colonic transit.
- “The presence of fibre shortens the transit times and increases the stool bulk”

Dietary fibre is of two types:

1. Soluble fibres: It absorbs upto 15 times its weight in water as it moves through GIT, producing softer stools. Its good sources are oat, flaxseeds, peas, beans, apple, citrus fruits, carrots, barley and psyllium.
2. Insoluble fibre: It promotes movement of material through digestive system and increases stool bulk. It’s good sources are wheat flour, wheat bran, nuts and vegetables.

505. Cross product ratio is determined by which study ?

a) Case control

b) Cohort

c) Cross sectional

d) RCT

Correct Answer - A
Ans.A. Case control study
Cross product ratio :
Risk in case control study is calculated by odds ratio (cross product ratio).

506. In a normal curve what is the area that comes under 1 standard deviation-

a) 50%

b) 68%

c) 95%

d) 100%

Correct Answer - B
Ans. B. 68%
1 SD includes → 68% of values
2 SD includes → 95% of values
3 SD includes → 99.7% of values

507. 2 year old boy of weight 12 kg with vitamin A deficiency what is oral dose of vitamin A

a) 50, 000 I.U

b) 1 lakh I.U.

c) 1.5 lakh I.U

d) 2 lakh I.U

Correct Answer - D
Ans.D. 2 lakh I.U
Treatment:

- Oral therapy: The oral regimen of vitamin A is 200,000 IU on day of presentation, next day, and 2-4 weeks later.
- Children less than 1 year of age or less than 8 kg should receive half the dose of the above dose. Repeat 200,000 IU every 6 months up to 6 years of age to prevent recurrence.
- Parenteral therapy: If the patient has severe disease, is unable to take oral feeds, or has malabsorption, the preferable dose is 100,000 IU of vitamin A given intramuscularly.
- Children with severe measles should also receive vitamin A as they are very likely to be benefited from such therapy both in terms of saving sight and reducing case fatality.
- Prevention
  Prophylaxis consists of periodic administration of Vitamin A supplements. WHO recommended schedule, which is universally recommended is as follows:
- Infants 6–12 months old and any older children weighing less than 8 kg – 100,000 IU orally every 3–6 months

- Children over 1 year and under 6 years of age – 200,000 IU orally every 6 months
- Infants less than 6 months old, who are not being breastfed – 50,000 IU orally should be given before they attain the age of 6 months

508. Not a personal protective equipment

a) Goggles

b) Badges for detecting radiation

c) Gloves

d) Lab coat

Correct Answer - B
Ans. B.Badges for detecting radiation

509. Confounding factor is defined as

a) Factor associated with both the exposure and the disease and is distributed unequally in study and control groups.

b) Factor associated with exposure only and is distributed unequally in study and control groups.

c) Factor associated with both the exposure and the disease and is distributed equally in study and control groups

d) Factor associated with the disease and is distributed equally in study and control groups.

Correct Answer - A

Ans. A. Factor associated with both the exposure and the disease and is distributed unequally in study and control groups.

- Epidemiological studies search for the causes of diseases, based on associations with various risk factors that are measured in the study. In addition to the exposures that the study is investigating, there may be other factors that are associated with the exposure and are also risk factors for the disease. If the prevalence of these other factors differs between groups being compared, they will distort the observed association between the disease and exposure under study. Such variables may partially or completely account for any apparent association between an exposure variable and disease. These distorting factors are called confounding factors or variables.
- Thus a Confounding factor is defined as one which is associated with both the exposure and the disease and is distributed unequally in study and control groups. It is itself a risk.factor.for the disease.

510. Paired T test is defined as-

a) Test used to assess quantitative observations before and after an intervention

b) Test that is used when the observation are in the form of proportions (for qualitative data)

c) Test applied when separate observations are made on individuals of two separate groups, and these need to be compared

d) None

Correct Answer - A
Ans. A. Test used to assess quantitative observations before and after an intervention
Paired t-tests

- The paired t-test is used to compare the values of means from two related samples, for example in a 'before and after' scenario.
- The difference between the means of the samples is unlikely to be equal to zero (due to sampling variation) and the hypothesis test is designed to answer the question "Is the observed difference sufficiently large enough to indicate that the alternative hypothesis is true".
- The answer comes in the form of a probability – the p-value.

511. Best representative of incidence of disease in different timeline-

a) Histogram

b) Line diagram

c) Scattered diagram

d) Bar diagram

Correct Answer - B
Ans. B. Line diagram

- Line diagrams are used to show the trend of events with passage of time.
- It is used to show the trend of events with passage of time and shows how the frequency of a particular event or variable vary over time.

512. For trench type of sanitary filling the amount of land required for 2 meter deep trench for 10000 population is-

a) 1 acre

b) 2 acre

c) 3 acre

d) 4 acre

Correct Answer - A
Ans. A. 1 acre
General WHO Guidelines for Shallow Trenches is 3-5 Metre for 100 People . So About 300-500 Meter of Shallow Trenches for 10,000 People.
Also there should be a perimeter of 30 m around the trench.
Now 1 Acre = 4046 Sq Meter [200 m X 200 m]
Hence Answer is 1 Acre.

513. Risk of genetic diseases in consanguineous marriage between first cousins?

a) 1-2%

b) 4-8%

c) 8-10%

d) 12-14%

Correct Answer - B
Ans. B.4-8%
Consanguinity is a marriage between relatives and has various degrees. Closely related individuals have a higher chance of carrying the same alleles than those less closely related and therefore children from consanguineous marriages are more frequently homozygous for various alleles than those from non-consanguineous unions.
Generally speaking, frequency of congenital malformations among newborns of first cousin unions is about 2 times the frequency among the general population. In other words instead of a rate of 2-3% of birth defects in the general population, the risk to first cousin couples is around 4-6%.

514. Which is not a epidemiological indicator?

a) ABER

b) Annual parasite index

c) Annual falciparum incidence

d) None of the Above

Correct Answer - A
Answer – A. ABER
ABER or Annual Blood Examination Rate is not an epidemiological indicator but an indicator of operational efficiency of Malaria Control Programme.

515. Health center in remotest area for planning and management of schemes:

a) Anganwadi

b) Block centre

c) Sub-centre

d) PHC

Correct Answer - C
Ans.C. Sub-centre
The Sub-Centre is the most peripheral and first contact point between the primary health care system and the community. Sub-Centres are assigned tasks relating to interpersonal communication in order to bring about behavioral change and provide services in relation to maternal and child health, family welfare, nutrition, immunization, diarrhoea control and control of communicable diseases programmes.
The Sub-Centres are provided with basic drugs for minor ailments needed for taking care of essential health needs of men, women and children.

516. Dose of diphtheria antitoxin is-

a) 1000 to 5000 IU

b) 10000 to 100000 IU

c) 1000 to 2000 IU

d) None

Correct Answer - B
Ans. B. 10000 to 100000 IU

- DAT manufactured by Instituto Butantan is a sterile, transparent (clear) serum solution supplied in 10 mL ampoules containing 10,000 IU each.
- DAT must be stored in the refrigerator at 2 – 8°C (36 – 46°F).
- DO NOT FREEZE. Once an ampoule is opened, the DAT serum solution should be used immediately.

517. Vertical transmission of HIV is highest with-

a) Elective caesarean section

b) High viral RNA load

c) Breast feeding

d) Term delivery

Correct Answer - B
Ans. B. High viral RNA load

- Vaginal and emergency caesarean section deliveries, prematurity, and low CD4 cell count were most strongly associated with infant,s infection status in univariate analyses .
- Children delivered vaginally or by emergency caesarean section were more likely to be infected than those delivered by elective caesarean section, with a reduction in risk of 79% associated with the latter (P<0.001).
- Similarly, infants delivered before 37 weeks were more than twice as likely to be infected than infants who were not premature.
- Caesarean section before onset of labour and rupture of membranes approximately halves the risk of mother-to-child transmission.

Transmission rate:

- During pregnancy: 5–10%
- During labour and delivery:10–15%
- During breastfeeding:5–20%
- Overall without breastfeeding:15–25%
- Overall with breastfeeding to six months:20–35%
- Overall with breastfeeding to 18–24 months:30–45%

518. Screening is not useful in which carcinoma

a) Carcinoma prostate

b) Carcinoma colon

c) Carcinoma breast

d) Testicular tumor

Correct Answer - D

Ans: D. Testicular tumor

- Screening is not useful in testicular tumors.
- **Screening Recommendations for Asymptomatic Subjects:**

Breast:

- **Self-examination.**
- Clinical examination.
- Mammography.
- MRI.

Cervical:

- Pap test (cytology).
- HPV test

Colorectal:

- Sigmoidoscopy
- Fecal occult blood testing (FOBT)
- Colonoscopy
- Fecal DNA testing
- Fecal immunochemical testing (FIT)
- CT colonography

Lung:

- Low-dose computed tomography
- (CT) scan

Ovarian CA:

- CA marker-125
- Transvaginal ultrasound

Prostate:

- Prostate-specific antigen (PSA)
- Digital rectal examination (DRE)

Skin:

- Complete skin examination

519. CA-125 is a marker for the screening of ovarian cancer. To characterize this test, histopathological confirmation of ovarian cancer was done in a cohort of patients. 60/100 women who tested positive for this test had ovarian cancer and 20/100 women who tested negative had ovarian cancer. What is the negative predictive value of this test?

a) 20/100

b) 40/100

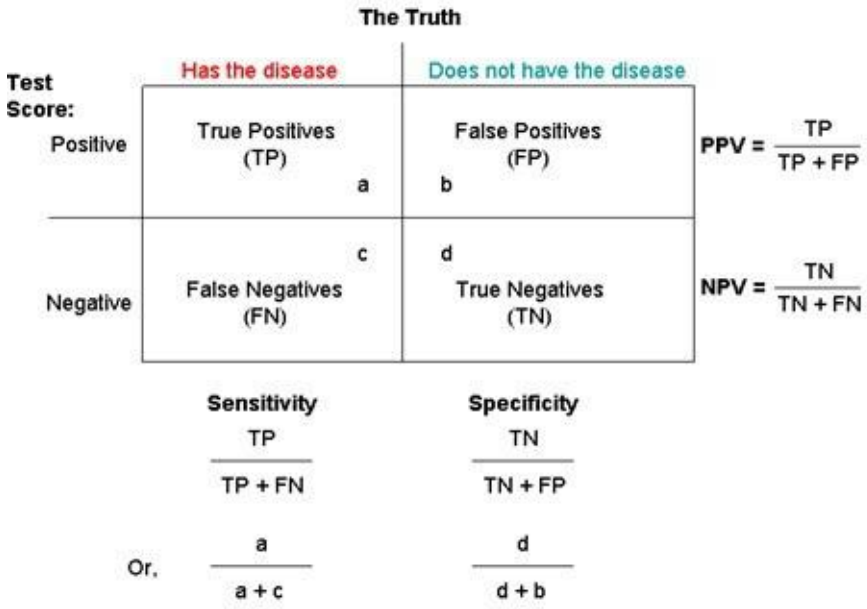
c) 60/100

d) 80/100

Correct Answer - D

Ans: D. 80/100

- Negative predictive value (NPV): Ability of a screening test to identify correctly all those who don't have the disease, out of all those who test negative on a screening test.



Negative Predictive Value (NPV) = Number of true negatives/(Number of true negatives + number of false negatives).

	Disease present	**Disease absent**
Test Positive	60 (a: TP)	40 (b: FP)
Test Negative	20 (c: FN)	80 (d: TN)
Total	80	120

- True negatives = 80
- Total negatives = 100
- Negative predictive value = 80/100 = 80%.

520. All of the following are duties of an ASHA worker except:

a) Primary screening for prevalence of non-communicable diseases

b) Administering zero dose of DPT and OPV

c) Assessing the success of national programs under ANM

d) All

Correct Answer - B

Ans: C. Administering zero dose of DPT and OPV

Ref: Park 24Ie p936, 23Ie p449, 22Ie p414; Ministry of Health anti Family Welfare (MoHFW). (2005b). Reading Material for ASHA. Government of India)

- ASHA does'nt receive financial remuneration for administering zero dose of DPT and OPV is not the function of ASHA.

ASHA Payments under Janani Suraksha Yojana (JSY): On 45th Day:

- 6 visits in institutional deliveries (Day 3, 7, 14, 21, 28,
- 7 visits in home deliveries (Day 1, 3, 7, 14, 21, 28, 42).
- Birth weight record
- Immunized with BCG, first dose of OPV & DPT
- Birth registration
- Mother & child are safe

521. Which of the following conditions must be fulfilled for a PHC to become a first referral unit ?

a) 4-6 beds

b) 15 workers

c) Emergency obsteric care

d) Basic laboratory services

Correct Answer - C
Ans. is 'c' i.e., Emergency obsteric care [Ref Textbook of Indian Health care - 728]
Critical determinants of a first feferral unit

- 24-hour delivery services including normal and assisted deliveries
- Emergency obstetric care including surgical interventions like caesarean sections and other medical interventions, New-born care, Emergency care of sick children, Full range of family planning services including laproscopic services, Safe abortion services, Treatment of STI / RTI, Blood storage facility, Essential laboratory services, Referral (transport) services.

522. Which of the following has responsibility of data collection for active malaria surveillance at PHC level ?

a) DHO [District Health Officer]

b) MPW [Multipurpose worker]

c) MO-PHC [Medical Officer-PHC]

d) DMO [District Medical Officer]

Correct Answer - C
Ans. is 'c' i.e., MO-PHC [Medical Officer-PHC]
[Ref Park 24"/e p. 433]

- "The Medical Officer-PHC has the overall responsibility for surveillance and laboratory services, and also supervices the spray***".***

523. Endemic disease is defined as -

a) Disease occuring regularly in expected frequency

b) Disease occuring irregularly

c) Disease occuring in excess of expected freqency

d) Disease affecting a large population

Correct Answer - A

Ans. is 'a' i.e., Disease occuring regularly in expected frequency ***[Ref Park 23"/e p. 93 & 22"/e p. 89]***

Sporadic → Disease occuring irregularly from time to time.

Endemic → Disease occuring regularly in expected frequency.

Epidemic → Disease occuring in excess of expected frequency.

Pandemic → Epidemic affecting a large proportion of population over a wide geographic area.

524. True about cohort study

a) Descriptive study

b) Incidence study

c) Proceeds from effect to cause

d) All are correct

Correct Answer - B
A cohort study is a type of analytic observational study
Cohort study proceeds forward from cause to effect, i.e., the disease has not occurred in subjects (In contrast to case-control study which proceeds backward from effect to cause).
It is also known as Prospective study, longitudinal study, Incidence study, forward-looking study.
The features of cohort studies are :
The cohorts are identified before the appearance of the disease under investigation.
The study groups, so defined, are observed over some time to determine the frequency of disease among them.
The study proceeds forward from cause to effect.

525. Secondary prevention is applicable to

a) Causal factors

b) Early stage of disease

c) Late stage of disease

d) None of the above

Correct Answer - B

Ans. is 'b' i.e., Early stage of disease

- Primordial prevention → Before risk factor present.
- Primary prevention → Before onset of disease (risk factor present).
- Secondary prevention → In early stage of disease.
- Tertiary prevention → Late stage of disease.

526. Relationship between positive predictive value and prevalence ?

a) PPV α Prevalence

b) PPV α 1/Prevalence

c) PPV x Prevalence = 1

d) PPV = 1/Prevalence

Correct Answer - A

Ans. is 'a' i.e., PPV α Prevalence

Prevalence affects the PPV the most. PPV is directly proportional to the prevalence of the disease in the population. However, both sensitivity and specificity can change the predictive value.

The prevalence of a disease in a population is high, the more accurate will be the positive predictive value of a screening test. If the prevalence declines, the PPV will be low.

NPV varies inversely with the prevalence

527. HIV screening for blood transfusion is done by -

a) NACO

b) ASHA

c) Ministry of education

d) None of the above

Correct Answer - A

Ans. is 'a' i.e., NACO [Ref Park 23rd/e p. 437]

- Access to safe blood for the needy is the primary responsibility of NACO (National AIDS control organization).
- Guidelines for blood bank, blood donors and dialysis unit have been formulated.
- The strategy is to ensure safe collection, processing, storage and distribution of blood and blood products.
- Testing of every unit of blood is mandatory for HIV, HBV, HCV, malaria, syphilis.

528. Vitamin deficient in Famines ?

a) A

b) D

c) B_{12}

d) B6

Correct Answer - A

Ans. is 'a' i.e.,A [Ref Food scarcity and Famine p. 100]

In times of food scarcity and famine, the most important deficiency disease is xerophthalmia (vitamin A deficiency), which can cause permanent blindness and may also contribute to increased incidence, severity and duration of infectious diseases like measles, diarrhea and respiratory tract infection.

Where people are totally dependent on food aid rations, other deficiency diseases may also develop :-

1. Scurvy (Vitamin C deficiency)
2. Pellagra (Niacin deficiency)
3. Nutritional anemia (Iron or folic acid deficiency)

529. Which is best to represent the data of following table -

Year	1991	1992	1993	1994
Number of LBW bodies	75	125	50	25

a) Bar chart

b) Histogram

c) Frequency polygone

d) Scatter diagram

Correct Answer - A

Ans. is 'a' i.e.,Bar chart

We can plot the low birth statistics of a hospital on Bar chart, histogram or frequency polygon depending on what type of data we want.

- To know the total number of LBW neonates in different years and compare the frequencies Bar chart.
- To know the number of LBW neonates in different range of weights at a given time -) Histogram or frequency polygone.

530. Observation under nursing care for 24 hours in an hospital is defined as ?

a) Inpatient

b) Outpatient

c) Observation status patient

d) Urgent care patient

Correct Answer - C

Ans. is 'c' i.e., Observation status patient

- Observation status patients : These are neither inpatients nor outpatients. These patients are placed in a hospital bed (often in an inpatient unit) after displaying signs/symptoms that require additional work-up. Observational stay is usually limited to 24 hours then the physician must determine whether patient's condition warrants inpatient addmission or discharge. If the patient is discharged it is called observation status pedient, however if the patient is admitted to the hospital then status is changed to inpatient.
- Inpatient : A patient is admitted in hospital room for an overnight or more than that.
- Outpatient : A patient receives a diagnosis and/or treatment but does not stay overnight.

531. Not true about strategic plan for malaria control 20122017 ?

a) Objective is API < 1 per 10,000

b) 50% reduction in mortality by 2017

c) Annual incidence < 10 per 1000 by 2017

d) Complete treatment to at least 80% of patients

Correct Answer - C

Ans. is 'c' i.e., Annual incidence < 10 per 1000 by 2017

Strategic action plan for malaria control in India : 2012-2017

Objective of plan is to achieve API < 1 per 10,000 population by the end of 2017.

Goals of strategic plan are :

1. Screnning all fever cases suspected for malaria (60% through quality microscopy and 40% by rapid diagnostic test).
2. Treating all P. falciparum cases with full course of effective ACT and primaquine, and all P. vivax cases with 3 days chloroquine and 14 days primaquine.
3. Equipping all health institutions (PHC level and above), especiality in high-risk areas, with microscopy facility and RDT for emergency use and injectable artemisinin derivatives.

532. A problem village is defined as if water source is ?

a) > 0.5 km

b) > 1 km

c) > 1.6 km

d) None of the above

Correct Answer - C

Ans. is 'c' i.e., > 1.6 km [Ref Park 22"`l le p. 428 & 21"/e p. 418]

- A problem village has been defined as one
- Where no source of safe water is available within a distance of 1.6 km, or
- Where water is available at a depth of more than 15 meters, or
- Where water source has excess salinity, iron, fluorides and other toxic elements, or
- Where water is exposed to the risk of cholera.

533. Human, animal, fomite or objects from which infective organism enters the host is called ?

a) Source

b) Reservoir

c) Carrier

d) None

Correct Answer - A

Ans. is 'a' i.e., Source *[Ref: Park 23rd/e p.92-97]*

Source is 'the person, animal, object or substance from which infectious agent passes to host', i.e. man acquires infection from source.

Reservoir is 'any person, animal, insect, plant, soil or substance in which an infectious agent lives and multiplies'. Infectious agent is dependent on reservoir for survival. From reservoir it can be transmitted to susceptible host. Thus a reservoir may act as a source of infection when a person acquires infection directly from a reservoir.

534. Reservoir is defined as ?

a) Person, animal or object from which infectious agent is transmitted to host

b) Person, animal or substance in which infectious agent lives and multiplies

c) Person or animal in which infectious agent causes a disease

d) None of the above

Correct Answer - B
Ans. is 'b' i.e., Person, animal or substance in which infectious agent lives and multiplies.

535. All are included in sleep hygiene except ?

a) Healthy diet

b) Sleeping on time

c) Sleeping in dark room

d) Exercise before sleep

Correct Answer - D

Ans. is 'd' i.e.,Exercise before sleep [Ref Comprehensive Guide for sleep p.173]

- Sleep hygiene can be considered the cornerstone of environmental modification and consists of developing good sleep habits and an environment that is conducive to sleep.
- Sleep hygiene includes the physical sleep setting, sleep schedule and sleep practices (e.g. pre-bedtime routine), all of which influence effective sleep.

The principles of sleep hygiene include ?

1. Eating a healthy diet
2. Limiting amount of caffeine intake
3. Going to bed and getting out of bed at consistent time
4. Sleeping in dark, quiete and temperature controlled rook on a comfortable mattress and pillow.

536. Not included in Bradford Hill's criteria ?

a) Strength of association

b) Consistency of association

c) Specificity of association

d) Lack of temporal association

Correct Answer - D

Ans. is 'd' i.e., Lack of temporal association *[Ref Park 23"/e p. 88-89]*

It is the presence of temporal association (not lack or absence) that forms a criteria for causal relationship.

Criteria that suggest causal relationship (Bradford Hill's criteria)

Likehood of a causal relationship is increased by the presence of the following criteria :?

1. Temporal association
2. Strength of association
3. Specificity of association
4. Consistency of association
5. Biological plausibility
6. Coherence of association

Hill's criteria (sometimes also known as 'Surgeon general's Criteria' of causal association): in epidemiology are Analogous to Koch's Postulates (of causal association between a microbe and disease) in microbiology.

537. Regarding PPV vaccine following is true ?

a) Given at birth

b) Obtained from cell wall polysaccharide

c) Indicated in sickle cell disease

d) Commonly used

Correct Answer - C

Ans. is 'c' i.e., Indicated in sickle cell disease [Ref Essentials of microbiology ydie p. 391]

- Pneumococcal polysaccharide vaccine (PPV or PPSV) is prepared from capsular (not cell wall) polysaccharide. It is not given before 2 years of age
- It is not for general use, but given in conditions which predispose to pneumococcal infection, like sickle cell anemia.

538. Most important criterian in causal relationship hypothesis ?

a) Temporal association

b) Coherence of association

c) Specificity of association

d) Strength of association

Correct Answer - A

Ans. is 'a' i.e., Temporal association *[Ref Park 23rd/e p.89]*

Most important criteria → temporal association

Weakest and most difficult criteria to establish → specificity of association

539. The weakest criterian in causal relatianship hypothesis?

a) Temporal association

b) Coherence of association

c) Specificity of association

d) Strength of association

Correct Answer - C
Ans. is 'c' i.e., Specificity of association

540. Benefit of screening is ?

a) Prevention of disease/cancer

b) Early treatment of disease

c) Provide rehabilitation

d) Diagnosing all the missing cases

Correct Answer - B
Ans. is 'b' i.e., Early treatment of disease
Screening is the active search for the disease among apparently healthy people.
Screening intends to identify healthy person those likely to have a disease or at increased risk of a disease
understudy, thus enabling earlier intervention and management in the hope to reduce mortality and suffering from a disease.
Screening is a type of secondary prevention → Early diagnosis, treatment

541. Benefit of RCT ?

a) Faster study

b) Cheaper study

c) No selection bias

d) Suitable for rare disease

Correct Answer - C

Ans. is 'c' i.e., No selection bias *[Ref Park 23rd le p.81-83]*

Randomization is the heart of RCT. Randomization is a statistical procedure by which the participants are allocated into study group (in which intervention is given) and control group/reference group (in which intervention is not given).

It is worth noting that randomisation is done while dividing the participants into study group and control (reference) group, and not while selecting subjects for study, i.e. randomization is done after the sample of subjects has already been selected. Therefor, each participant has 'equal and known chance' of falling into either study group or control group.

Randomization is an attempt to eliminate bias and allow comparability. It will give the greatest confidence that the groups are comparable so that "like" can be compared with "like". It ensures that the investigator has no control over allocation of participants to either study or control group, thus eliminating what is known as selection bias.

542. As per ICDS scheme, there should be one Anganwadi centre for a population of ?

a) 1000-1500

b) 2000-25000

c) 400-800

d) 100-200

Correct Answer - C

Ans. is 'c' i.e.,400-800

The recommendations of Anganwadi center are :?

1. Rural/urban projects -› One anganwadi centere per 400-800 population, and one mini-anganwadi center per 150-400 population.
2. Tribal/Hilly/Other difficult areas One anganwadi centre per 300-800 population, and one mini-anganwadi centre per 150-300 population.

543. True about Anganwadi worker is all except ?

a) Mostly female

b) Training for 4 months

c) Under ICDS scheme

d) Covers a population of 2000

Correct Answer - D

Ans. is 'D' i.e., Covers a population of 2000

- Anganwadi center is mainly managed by Anganwadi worker.
- Mostly Anganwadi worker is a female worker.
- She is a health worker chosen from the community and given 4 months training in health, nutrition and childcare.
- one AWC is for 400-800 population

544. Most commonly used blinding technique in epidemiological studies ?

a) Single blinding

b) Double blinding

c) Triple blinding

d) None of the above

Correct Answer - B:C
Ans. is 'b > c' i.e., Double blinding > Triple blinding *[Ref Statistics and epidemiology 3'/e p.46]*
Most commonly used blinding is double blinding, i.e. most of the epidemiological studies are started as double blinded. But more aften than not it becomes triple blinded as more than two people in the study are blinded → for example the statician (analyzer) performing the analysis is often blinded in addition to doctor (investigator) and patient (study subject).

545. In disaster management following are practiced except

a) Triage

b) Rehabilitation

c) Mass vaccination

d) Disaster response

Correct Answer - C

Ans. is 'c' i.e., Mass vaccination

Disaster Management includes three aspects:

1. Disaster impact and response:

Search, rescue, and first-aid

- **Field care**
- **Triage**
- **Tagging**
- **Identification of the dead**

2. Rehabilitation or recovery:

- **Water supply**
- **Basic sanitation and personal hygiene**
- **Food safety**
- **Vector control**

3. Mitigation: Measures designed either to prevent hazards from causing disaster or to reduce the effects of the disaster. This also includes preparedness for any impending disasters or in disaster-prone areas.

546. Most effective blinding technique ?

a) Single blinding

b) Double blinding

c) Triple blinding

d) Any of the above

Correct Answer - C
Ans. is 'c' i.e., Triple blinding *[Ref Read below]*
Most commonly use blinding → Double blinding
Best blinding technique to eliminate bias → Triple blinding

547. In disaster management all are true except

a) Mitigation before a disaster strikes

b) Response in pre-disaster phase

c) Yellow colour is for medium priority

d) Gastroenteritis is commonest infection after disaster

Correct Answer - B

Ans. is 'B' i.e., Response in pre-disaster phase

<u>Disaster management</u>

Disaster Impact

Most injuries are sustained during the impact, and thus the greatest need for emergency care occurs in the first few hours.

The management can be divided into:-

- Search, rescue and first aid: Most immediate help comes from uninjured survivors.
- Field care: As many injured patients come simultaneously, emergency services should be proper in terms of priority and numbers of facilities.
- Triage: Triage consists of classifying the injured based on the severity of injuries and the likelihood of their survival with prompt medical intervention. The most common triage classification system used internationally is four colour code system:?

1.	**Red -**	**High priority treatment or transfer**
2.	**Yellow -**	**Medium priority**
3.	**Green**	**Ambulatory patients**

4.	**Black -**	**Dead or moribund patients**

- Tagging: All patients should be identified with tags.
- Identification of the dead: Proper respect to dead is of great importance

548. Which of one of the following is NOT a utilization rate?

a) Population bed ratio

b) Bed occupancy rate

c) Bed turnover ratio

d) Average length of stay

Correct Answer - A

Ans. is 'a' i.e., Population bed ratio *[Ref Park 23rd/e p. 26 & 22nd/e p. 25]*

.. Proportion of infants who are "fully immunized" against the 6 EPI diseases.
2. Proportion of pregnant women who receive antenatal care, or have their deliveries supervised by a trained birth attendant.
3. Percentage of population using various methods of family planning.
4. Bed - occupancy rate
5. Average length of stay
6. Bed turn-over ratio (i.e. discharges / average

549. True about combined prospective-retrospective study true is ?

a) Exposure (+) nt, disease (+) nt

b) Exposure (+) nt, disease (-) nt

c) Exposure (-) nt, disease (+) nt

d) Exposure (-) nt, disease (-) nt

Correct Answer - A

Ans. is 'a' i.e., Exposure (+) nt, disease (+) nt ***[Ref Park 23"'/e p. 79-85]***

There are following types of cohort study:**?**

A) Prospective cohort study

- Outcome has not yet occurred when the study has begun: Only exposure has occurred; we look for development of same disease in both exposed and non-exposed groups

B) Retrospective cohort study

- Both exposure as well as outcome have occurred when the study has begun: First we go back in time and take only exposure into consideration (cohorts identified from past hospital/ college records), then look for development of same disease in both exposed and non-exposed groups

C) Combined prospective-retrospective cohort study

- Both exposure as well as outcome have occurred when the study has begun: First we go back in time and take only exposure into consideration (cohorts identified from past hospital/ college records), then look for development of same disease in both exposed and non-exposed groups; later cohort is followed prospectively into future for outcome.

550. Micropolysopora faeni causes ?

a) Baggasosis

b) Farmer's lung

c) Suberosis

d) Sequousis

Correct Answer - B

Ans. is 'B' i.e., Farmer's lung

Micropolyspora faeni in Hay or grain dust causes farmer's lung.

Anthracosis	
• Silicosis	Coal dust
• Siderosis	Silica
• Byssinosis	Iron
• Farmer's lung	Cotton dust (textile industry)
• Sequousis	Hay or grain dust (micropolyspora faeni)
• Suberosis	
	Moldy red wood saw dust
Detergent worker's lung	Moldy cork dust Enzyme additives
• Baggassosis	Sugarcane dust (thermoactinomyces sacchari)

551. Slection bias occurs during ?

a) Recruitment

b) Treatment

c) Analysis

d) Observation

Correct Answer - A
Ans. is 'a' i.e., Recruitment *[Ref: Essentials of epidemiology in Public Health p.270]*
Selection biases are distortion that result from procedure used to select subjects and from factors that influence study participation.
Groups to be compared are differentially susceptible to the outcome even before the experimental maneuver is performed.
Selection bias usually occurs at the Stage of recruitment of participants.
Selection biases is less likely to occur in a cohort study compared to case-control or cross-sectional study because study participant are selected before the outcome occurs.
Randomized control trials do not have selection bias as randomization eliminates selection (investigator) bias.

552. Incineration is used for which category of waste ?

a) Category 1

b) Category 7

c) Category 4

d) Category 10

Correct Answer - A

Ans. is 'a' i.e., Category 1 [Ref Park 23`ale p.793-794]

- Incineration is done for category 1,2,3 & 6

553. Selection bias occurs mainly in

a) Cohort study

b) Case-control study

c) RCT

d) All have equal chances

Correct Answer - B
Ans. is 'b' i.e., Case-control study
Case-control study > cross-sectional study > Retrospective cohort study > Prospective cohort study > RCT
Selection bias: Cases and controls may not be representative of the population or there may be systematic differences between both.

554. All are incinerated except ?

a) Human anatomical waste

b) Animal waste

c) Infected solid waste

d) Broken thermometers

Correct Answer - D

Ans. is 'd' i.e.,Broken thermometers [Ref: Park 23"[1]/e p. 791 & 22"/e p. 738]

"Waste types not to be incinerated are: (a) pressurized gas container; (b) large amount of reactive chemical wastes; (c) silver salts and photographic or radiographic wastes; (d) Halogenated plastics such as PVC; (e) waste with high mercury or cadmium content, such as broken thermometers, used batteries, and lead-lined wooden panels; and (J) sealed ampules or ampules containing heavy metals"

555. Best study technique to study the occurence of rare adverse effects of drug ?

a) Case-control study

b) Cohort study

c) Clinical trial/experimental study

d) Cross-sectional study

Correct Answer - C

Ans. is 'c' i.e., Clinical trial/experimental study *[Ref Clinical Research for medicine 2009/e p.62]*

Experimental epidemiology is also called trial. Broadly speaking, a trial refers to putting something to a test. This allows the term to be used in reference to a test of a treatment for the sick or a test of a preventive measure intended to avert illness, injury or disease. Therefore, the defining feature of an experimental study is its ability to allocate or assign interventions or treatment to experiment unit. In simple words, the study of a treatment (Drugs, surgical intervention) or preventive measure (e.g. vaccination) on living subjects is known as experimental study or trial.

556. Which category waste is disposed in red bags ?

a) Category 1

b) Category 2

c) Category 3

d) Category 10

Correct Answer - C
Ans. is 'c' i.e.,Category 3 [Ref Park 23'/e p.793, 794]

557. Bladder cancer can occur in those who are working in chimney for 25 years. Which is the best study for this relationship ?

a) Meta-analysis

b) Cross-sectional study

c) Randomized control trial with double blinding

d) Cohort study

Correct Answer - A

Ans. is 'a' i.e., Meta-analysis

As a single study unit, double blind RCT is the best:

- "The efficacy of new interventions are most readily accepted if the results are from randomized controled trial"
- Peer Review & Biomedical publication
- However, overall meta-analysis is a better study since it combines the data from multiple RCT and also from other types of study.
- "Randomized controlled trials (RCT) provide the stongest, most relevant evidence to inform practice. Some evidence hierarchies place systematic review and meta-analysis above RCTs since these often combine data from multiple RCTs, and possibly from other study type as well" – Epidemiology at a glance
- So, systematic review and meta-analysis of RCTs are the best epidemiological studies.

558. Waste Sharps should be disposed in ?

a) Black bag

b) Yellow bag

c) Blue bag

d) None of these

Correct Answer - C
Ans. is 'c' i.e.,Blue bag [Ref Park 23'/e p. 793-794]

559. SI unit of luminal intesity is -

a) Candela

b) Lumen

c) Lux

d) Coulomb

Correct Answer - A

Ans. is 'a' i.e., Candela [Ref BASAK p.4]

- Candela is the SI base unit of luminous intensity, i.e. luminous power per unit solid angle emitted by a point light source in a particular direction.
- SI unit of luminous intensity -÷ Candela
- SI unit of luminous flux -± Lumen
- SI unit of illuminance -÷ Lux

560. Which is an example of case control study ?

a) Thalidomide and teratogenicity

b) Framingham heart study

c) PVC and angiosarcoma of liver

d) Doll & Hill Study

Correct Answer - A
Ans. is 'a' i.e., Thalidomide and teratogenicity *[Ref: Park 23rd /e* p. *74, 75]*

561. Anemometer measures ?

a) Humidity

b) Air velocity

c) Room temperature

d) Radiant temperature

Correct Answer - B
Ans. is 'b' i.e., Air velocity [Ref Park 23'/e p. 749 & 22"^{d}/e p. 695]

562. Immunity starts after how many days of yellow fever vaccination ?

a) 7-10 days

b) 2-3 weeks

c) 4-5 weeks

d) 2-3 months

Correct Answer - A

Ans. is 'a' i.e., 7-10 days *[Ref Park 23rd /e p. 283]*

Yellow fever vaccine

- It is a live attenuated freez dried (lyophilized) vaccine, prepared from 17 D strain.
- It is given by subcutaneous route at insertion of deltoid.
- Immunity lasts from 7 days of vaccination till 35 years. The validity of the vaccination certificate begins 10 days after the date of vaccination and extends upto 10 years.
- Diluent used for reconstitution is cold physiological saline and reconstituted vaccine should be used within 30 minutes. Cold chain temperature for storage is -30° to +5°C.
- Yellow fever vaccine is the only live vaccine that can be given in pregnancy, if required. Yellow fever and cholera vaccine cannot be given together, a minimum gap of 3 weeks is required between the two.

563. Daylight factor in the kitchen should be ?

a) 5%

b) 8%

c) 10%

d) 15%

Correct Answer - C
Ans. is 'c' i.e.,10% [Ref Park 22"d /e p. 687, 688]
Minimum recommended day light factor :
Living room → 8%
Kitchens → 10%

564. Which Dipheria vaccine is recommended in a 14 years old girl ?

a) DPT

b) DT

c) Tdap

d) None

Correct Answer - C

Ans. is 'c' i.e., Tdap *[Ref: www.tapcoi.com]*

- According to IAP (Indian Academy of Paediatricians) Tdap is recommended for adolescents (10-18 years). (Note Tdap contains a lower concentration of diphtheria and pertusis toxoids than DtaP)

Note:

- DPT → Diphtheria, Cellular pertussis, Tetanu, used before 7 years
- DtaP → Diphtheria, Tetanus, acellular pertussis
- Tdap → Tetanus, diphtheria (low dose), acellular pertussis (low dose) -> used in adolescents.

565. In water testing from a well [containing 75000 litres of water] by Horrock's apparatus, there is blue colour from 4th cup onwards. What is the amount of bleaching powder required to disinfect the water ?

a) 1000 gm

b) 1300 gm

c) 1600 gm

d) 2000 gm

Correct Answer - B

Ans. is 'b' i.e.,1300 gm

- In Horrock's apparatus, 6 cups are filled with water and indicator (starch iodine) is added in increasing quantity in each cup (1 unit in 1st, 2 units in 2nd, 3 units in third and so on).
- The first cup which shows the blue color is multiplied by 2, for example, if the 2nd cup shows a blue colour than 4 grams (2 x 2) of bleaching powder will be required to disinfect 455 litre of water.
- Bleaching powder required=8*75000/455=1318

566. Indicator used in Horroch's apparatus ?

a) Bleaching powder

b) Soda-lime

c) Potassium permagnate

d) Starch iodine

Correct Answer - D

Ans. is 'd' i.e., Starch iodine [Ref Park 23'/e p. 717]

- In Horrock's apparatus, 6 cups are filled with water and indicator (starch iodine) is added in increasing quantity in each cup (1 unit in lst, 2 units in 2nd, 3 units in third and so on).
- The first cup which shows the blue color is multiplied by 2, for example if 2nd cup shows blue colour than 4 grams (2 x 2) of bleaching powder will required to disinfect 455 litre of water.

567. Droplet nuclei is a type of ?

a) Vertical transmission

b) Direct transmission

c) Indirect transmission

d) Biological transmission

Correct Answer - B

Ans. is 'b' i.e., Direct transmission *[Ref Park 23"/e p.97-100, 768]*

Communicable disease may be transmitted from the reservoir or source of infection to a susceptible host in many different ways.

Modes of transmission may be :?

1. Direct transmission : Direct contact, droplet infection, contact with soil, inoculation into skin or mucosa, vertical transmission (through placenta).
2. Indirect transmission : Vehicle-borne, vector-borne, air-borne, fomite-borne, by uncleaned hand & fingers.

568. Which is not a direct transmission ?

a) Droplet infection

b) Vertical transmission

c) Transmission by mosquito

d) Soil contact

Correct Answer - C
Ans. is 'c' i.e., Transmission by mosquito

569. Horrock's apparatus is used to measure ?

a) Wind velocity

b) Humidity

c) Chlorine demand

d) Cooling power

Correct Answer - C
Ans. is 'c' i.e., Chlorine demand
-Chlorine demand for water can be estimated by Horrock's apparatus.
-Chlorine demand of water is the amount of chlorine that is needed to destroy bacteria and to oxidize all the organic matter and ammoniacal substances present in water.
-It is the difference between the amount of chlorine added to the water, and the amount of residual chlorine remaining at the end of a specific period of contact (usually 1 hr), at a given temperature and pH of the water

570. After taking MMR live vaccine, conception should not occur within ?

a) 2 weeks

b) 4 weeks

c) 8 weeks

d) 10 weeks

Correct Answer - B
Ans. is 'b' i.e., 4 weeks *[Ref* CDC *guidlines of vaccination in pregnancy]*
Measles-mumps-rubella (MMR) vaccine and its component vaccines should not be administered to women known to be pregnant. Because a risk to be fetus from administration of these live virus vaccines cannot be excluded for theoretical reasons, *women should be counseled to avoid becoming pregnant for 28 days after vaccination* with MMR vaccine or its component vaccines or varicella vaccine.

571. True about culex larvae ?

a) Rest parallel to surface water

b) Long Palmate hair

c) Siphon tube present

d) All are true

Correct Answer - C
Ans. is 'c' i.e., Siphon tube present [Ref Park 23'/e p. 769 & 22"^{d}/e p. 714]

572. Disinfection of urine is which type of disinfection ?

a) Precurrent

b) Concurrent

c) Preconcurrent

d) Terminal

Correct Answer - B

Ans. is 'b' i.e., Concurrent *[Ref Park 23"[1]/e p.127]*

Types of disinfection

There are following types of disinfection :?

1) Precurrent (prophylactic) disinfection

- It is done as a preventive method before illness, i.e. person is not ill, for example chlorination of water, pasteurization of milk, and handwashing.

2) Concurrent disinfection

- It is done when person is ill. It is the application of disinfective measures as soon as possible after the discharge of infectious material from the body of patient or after the soiling of articles with such material, i.e., the disease agent is destroyed as soon as it is released from the body, and in this way further spread of the agent is stopped. e.g., disinfection of urine, faeces, vomit, contaminated linen, clothes, hands, dressing, aprons, gloves etc.

3) Terminal disinfection

- It is the application of disinfective measures after the patient has taken discharge from hospital or he/she has died. e.g., disinfection of hospital rooms & floor, burning or burial of soiled material.

573. Which is not an aryl organophosphate ?

a) Malathion

b) Parathion

c) Chlorthion

d) Diazinon

Correct Answer - A
Ans. is 'a' i.e., Malathion
Organophosphates

Aryl	Alkyl
Diazinon	Malathion
Parathion	Sulfotepp
Chlorpyrifos	Demeton
Chlorthion	Triclorfon
Paraoxon	HETP
	TEPP

574. Which is true of pathogenic mosquitoes ?

a) Anopheles has spotted abdomen

b) Mansoni lays eggs singly

c) Culex cause yellow fever

d) Aedes has stripped yellow scales

Correct Answer - D

Ans. is 'd' i.e., Aedes has stripped yellow scales [Ref Park 23rd ie p. 769 & 22nd/e p. 714]

- Aedes mosquitoes are easily distinguished by white stripes on a black body. Because of the striped or banded Character of their legs they are sometimes referred to as tiger mosquito.
- Anopheles has spotted wings (not spotted abdomen).
- Mansoni lays eggs in clusters.
- Yellow fever is caused by aedes mosquito (not culex).

575. Not a freeze dried vaccine ?

a) OPV

b) Measles

c) DPT

d) Rubella

Correct Answer - C

Ans. is 'c' i.e., DPT ***[Ref: Park 23"/e*** **p.** ***109 & 22"d/e p. 104]***

Vaccine which must be stored in the cold part but never allowed to freez.

Typhoid DPT TT
DT BCG Diluents Hepatitis B

576. Caloric requirement in an adult male for heavy work?

a) 1800 k cal/d

b) 2300 k cal/d

c) 3000 k cal/d

d) 3500 k cal/d

Correct Answer - D

Ans. is `d' i.e., 3500 k cal/d [Ref Park 23rd le p.634]

Indian Reference Indian Reference

Energy requirements	**Man**	**Woman**
Light work	2320 kcal/day	1900 kcal/day
Moderate work	2730 kcal/day	2230 kcal/day
Heavy work	3490 kcal/day	2850 kcal/day

577. Most widely used vaccine, beside OPV ?

a) BCG

b) TT

c) Influenza

d) Pneumococcal

Correct Answer - A
Ans. is 'a' i.e., BCG ***[Ref www.ncbi.nlm.mih.]***
"Making wider use of the world's most widely used vaccine : Bacille calmette-Guerine revaccination reconsidered"
"The bacille calmette-Guerin (BCG) vaccine has existed for 80 years and is one of the most widely used of all current vaccines, reading > 80% of neonates and infants in counteries where it is part of the national childhood immunization programme

578. Village Health and Nutrition Day (VHND) is observed ?

a) Every week

b) Every month

c) Every 6 month

d) Every year

Correct Answer - B

Ans. is 'B' i.e., Every month

- **The Village-Health and Nutrition day (VHND)** is to be organized once **every month** on a fixed day (such as the second Saturday).
- The day can be decided by the VHWSC (village health and water sanitation committee) in each village at anyone of the Anganwadi centers (AWCs) in that village, preferably, all the AWCs should be covered by rotation.
- On that day, Anganwadi worker and other VHWSC members will mobilize villagers to assemble in AWC.

579. Vanaspati Ghee is fortified with ?

a) Iodine

b) Vitamin A

c) Iron

d) Calcium

Correct Answer - B

Ans. is 'b' i.e., Vitamin A

Examples of food fortification : -

1. Iodisation of Salt
2. Addition of vitamin A and D in vanaspati (2500 IU vitamin A and 175 IU vitamin D per 100 gm).
3. Fluoridation of water.
4. Calcium added to fruit juices.
5. Folic acid added to flour.

580. True about chicken pox ?

a) Caused by Herpes simplex type-7

b) SAR is 90%

c) Infectious perios is 7 days prior to 7 days after onset of rash

d) Affects commonly 10-15 years old

Correct Answer - B

Ans. is 'b' i.e., SAR is 90% ***[Ref Park 23"/e p.144]***

The causative agent of chicken pox is **Varicella - Zoster** virus (Herpes simplex type III).

It is an acute respiratory infection with incubation period 10-21 days.

Infection is acquired through respiratory tract via air droplets or rarely from conjunctiva.

Infectious period (communicable period) for chicken pox is 2 days prior to 5 days after onset of rash, with a very high secondary attack rate of 90%.

Chicken-pox usually affects children of age group 5-9 years.

581. Chickenpox rash does not involve ?

a) Trunk

b) Axilla

c) Palms & soles

d) Back

Correct Answer - C

Ans. is 'c' i.e., Palms & soles *[Ref Park 23'/e p.144]*

Rash of chicken pox : Superficial, unilocular, centripetal, pleomorphic, symmetrical, affects flexor surfaces and axilla, spares palms and sales, has inflammation around, rapid evolution and dew-drop on rose petal appearnace.

582. Limiting amino acid in cereals ?

a) Methionine

b) Tryptophan

c) Lysine

d) Cysteine

Correct Answer - C

Ans. is 'c' i.e., Lysine

Food	**Deficiency**
Cereals	Lysine & threonine
Wheat	Lysine & threonine
Maize	Tryptophan & lysine
Pulses	Methionine & cysteine
Soybean	Methionine

583. 95% carrier and 5% cases are seen in ?

a) Measles

b) Diphtheria

c) Rabies

d) Hepatitis B

Correct Answer - B

Ans. is 'b' i.e., Diphtheria ***[Ref: Park 23rd/e p.160]***

Diphtheria is caused by **Corynebacterium diphtheriae,** a gram-positive bacterium.

Source of infection is either case or carrier, with carriers being the most common sources of infection, their ratio is estimated to be **95** carriers for 5 clinical cases. **Nasal carriers are more dangerous than throat carriers. Inmunuzation does not prevent carrier state.**

584. Mid-day meal provides ?

a) 1/2 of energy

b) 1/3 of protein

c) 30 gm pulse/day

d) All are correct

Correct Answer - C

Ans. is 'c' i.e., 30 gm pulse/day [Ref Park 23"Ve p.662]

Mid-day Meal Programme

It is also known as 'School Lunch Programme'. It was launched in 1961 under Ministry of Education. The features of programme are :

1. Meal should be a supplement and not a substitue to home diet.
2. The meal should supply at least 1/3 of total energy requirement and Y2 of total protein requirement.

A model-menu of mid-day school meal is as follows :-

A mid-day school meal

Foodstuffs	g/day/child
Cereals and millets	75
Pulses	30
Oils and fats	8
Leafy vegetables	30
Non-leafy vegetables	30

585. Skeletal fluorosis occurs with fluoride level in water?

a) < 1.5 mg/L

b) 1.5-3 mg/L

c) 3-6 mg/L

d) > 10 mg/L

Correct Answer - C
Ans. is 'C' i.e., 3-6 mg/L
Dental fluorosis → > 1.5 mg/L (PPM)
Skeletal fluorosis → 3-6 mg/L (PPM)
Crippling fluorosis → > 10 mg/L (PPM)

586. Following is Hib conjugate vaccine ?

a) Capsular polysaccharide

b) Cell wall polysaccheride

c) Capsular polysaccheride with carrier

d) PRP with carrier

Correct Answer - C:D

Ans. is 'd > c' i.e., PRP with carrier > Capsular polysaccheride with carrier *[Ref Pariza 4th/e p.3401*

Conjugated Hib vaccine include PRP (polyribosyl ribitol **phasphate)** covalently linked to carrier protein. **PRP** is **the Capsular polysaccaride** of H influenzae type B (Hib).

Currently three types of Hib (H influenzae type B) vaccines are available. These vary in ?

1. Protein carrier used
2. The molecular size of saccharide
3. Mehtod of conjugation of protein to saccharide

These vaccines are -

1. HbOC (mutant diphtheria toxin as the carrier protein)
2. PRP-T (Tetanus toxoid as the carrier protein)
3. PRP-OMP (major OMP of N meningitidis serogroup B as carrier)

587. True about Pertussis is ?

a) Most of the infections are subclinical

b) Most infective stage is Paroxysmal stage

c) Drug of choice is Erythromycin

d) Cerebellar ataxia may be a complication

Correct Answer - C

Ans. is 'c' i.e., Drug of choice is Erythromycin *[Ref Park 23'/e p.161]*

Pertussis (Whooping cough)

- Pertussis, also called '100 day cough', is caused by Bordetella pertussis (only 5% cases are caused by B. parapertussis).
- Source of infection is a case of pertussis. **There is no subclinical case or chronic carrier state.**
- Period **of infectivity (communicability)** extends from a week after exposuse to about 3 weeks after the onset of paroxysmal stage. **Catarrhal stage is most infective. Secondary attack rate is high, i.e. 90%.**
- For diagnosis, gold standard is isolation of organism in culture from nasopharyngeal secretion.
- **Erythromycin is the drug of choice for treatment of cases as well as for contacts. Isolation period** is 4 weeks or until paroxysms cease.

588. True about influenza infectivity ?

a) Communicable period is 5 days before to 5 days after the onset of symptoms

b) Source of infection is clinical case

c) There are no subclinical cases

d) All are correct

Correct Answer - B

Ans. is 'b' i.e., Source of infection is clinical case ***[Ref Park 23rdie p.154]***

Influenza

- Influenza virus a **RNA virus,** belongs to **orthomyxovirus.**
- Source of infection of influenza is a clinical case or subclinical case.
- Major reservoir of influenza virus exists in animal and birds.
- Incubation period is 18-72 hours. Most of the infections are subclinical. Clinical cases present with cough, fever, myalgia and headache.
- Complications include pneumonia, encephalitis, Reye's syndrome (with type-B virus); GB syndrome and gastric flu/GIT symptoms (with type-B virus).
- Period of Communicability is 1-2 days before to 1-2 days after onset of symptoms.

589. What is common in H5N1 and H7N7 strains of influenza ?

a) Frequent endemic infection in man

b) Have same frequency of antigenic variation

c) Strains of avian influenza

d) All are correct

Correct Answer - C

Ans. is 'c' i.e., Strains of avian influenza [Ref *Essentials of microbiology p.701; Harrison 18th/e p.1494; Park 23rd/e p.153]*

Avian influenza (Bird flu)

- It is caused mostly by **H_5** N, strain of influenza - A. It was detected in Hongkong in 1997 during a pandemic in poultry. It is a pandemic with high mortality rate (60%).
- Other types of influenza viruses which have been observed to cause avian influenza are **H_7 N_7 and** H_9 N_2 of influenza - A.
- Recently an outbreak of avian influenza was caused by 11_2 INT, in China, in 2013.
- Drug of choice for avian influenza is oseltamivir.

590. NPU for egg is ?

a) 70

b) 80

c) 85

d) 100

Correct Answer - D
Ans. is 'd' i.e., 100
The net protein utilization, or NPU, is the ratio of amino acid mass converted to proteins to the mass of amino acids supplied.

NPU for egg: 100	Wheat: 51	Fish: 77
NPU for meat: 80	Pulses: 45-50	Rice: 65
NPU for milk: 81	Soyabean: 55	

591. Not used for treatment and/or prophylaxis of seasonal influenza -

a) Amantidine

b) Rimantidine

c) Oseltamivir

d) Acyclovir

Correct Answer - D
Ans. is 'd' i.e., Acyclovir
Two classes of antiviral drugs are available for the treatment and prevention of influenza.
1. Neuraminidase inhibitors : Zanamivir, Oseltamivir, peramivir
2. Adamantanes : Amantidine, rimantidine

592. Capsular polysaccharide derived vaccine is available for all meningocci except ?

a) Group A

b) Group B

c) Group C

d) Group Y

Correct Answer - B

Ans. is 'b' i.e., Group B *[Ref Park 23rd ie p. 166]*

Meningococcal vaccine is prepared from Capsular polysaccharide. Vaccines are availabe for group A, C, Y and W-135. Bivalent (A, C), trivalent (A, C, W135) and tetravalent (A, C, Y, W135) vaccines are available.

Meningoccal group B vaccine was not available for last two decades. Recently, group B vaccine has also been developed in many countries (UK, Ireland) and is a part of routine immunization schedule.

Now, you must be thinking that why the answer of this question is group B meningococci. This is because meningococcal vaccine is not prepared from capsular polysaccharide.

593. Maternal mortality rate is defined as ?

a) Maternal death per 1000 total births

b) Maternal death per 1000 live births

c) Maternal death per 1000 women

d) Maternal death per 1000 women of reproductive age

Correct Answer - D
Ans. is 'd' i.e., Maternal death per 1000 women of reproductive age [Ref Park 23rd /e p.558-559]
Maternal mortality rate=Total no. of female death due to complication of pregnancy childbirth or within 42 days of delivery **/ Total no. of women of reproductive age x1000**

594. Vaccine derived polio virus outbreaks are due to ?

a) Type-2 virus

b) Type-3 virus

c) Type-1 virus

d) All of the above

Correct Answer - A
Ans. is 'a' i.e., Type-2 virus
"The main cause of vaccine derived poliovirus (VDPV) out breaks is currently type-2 component of OPV" ...Park 23rd/e
"Currently, the type-2 component contained in trivalent OPV accounts for more than 90% of all CVDPV cases" .

595. False regarding polio vaccination ?

a) Both killed and live vaccines are available

b) First OPV is given at 4 weeks

c) OPV induces both humoral and intestinal immunity

d) IPV is given intramuscularly

Correct Answer - B

Ans. is 'b' i.e., First OPV is given at 4 weeks *[Ref Park 23rd/e p.206-210]*

First OPV (zero dose) is given at birth.

There are two polio vaccines : killed (IPV) and live attenuated (OPV)

OPV induces both humoral and intestinal immunity, whereas IPV induces only humoral immunity.

IPV is given intramuscularly (preferrable) or subcutaneously.

596. Reservoir of infection in enteric fever ?

a) Birds

b) Cow

c) Cattle

d) Man

Correct Answer - D

Ans. is 'd' i.e., Man *[Ref Park 23rd le p.235]*

Typhoid fever is the result of systemic infection mainly by S.typhi found only in man. The term enteric fever include both typhoid fever (caused by S. typhi) and paratyphoid fever (caused by S. Paratyphi & 'C').

Reservoir - Man is the only reservoir. Carriers are more important than cases.

Source of infection

Primary Feces, Urine

Secondary - Water, food, fingers, flies.

597. Rideal-walker coefficient for disinfectant used for cholera stool should be ?

a) 2

b) 4

c) 7

d) 10

Correct Answer - D
Ans. is 'd' i.e., 10 *[Ref Park 23'1/4 p. 129-30 & 22"/e p. 120]*
For cholera **stool :** *?*

- "The most effective disinfectant for general use is a coal-tar disinfectant with a Rideal-Walker (RW) coefficient of 10 or more such as cresol". - Park 250

598. In a community of 1000000 population 105 children were born in a year out of which 5 was still births, and 4 died within 6 months after birth. The IMR is ?

a) 40

b) 90

c) 120

d) 150

Correct Answer - A

Ans. is 'a' i.e., 40 [Ref: Read below]

In the given question out of 105 deliveries, 5 were still births -3 Thus, live births are 100.

Infant deaths are 4.

$$\text{IMR} = \frac{\text{No. of death of less than 1 year age}}{\text{No of live birth}} \times 1000$$

$$\text{IMR} = \frac{4}{100} \times 1000 = 40 \text{ per } 1000 \text{ live births}$$

599. Women traveling from Bihar to Delhi is suspecting to have Kala-azar. Suitable investigation is ?

a) P24 antigen

b) Rk-39 test

c) Combo RDT

d) HRP-2 antigen

Correct Answer - B

Ans. is 'b' i.e., rk-39 test *[Ref Park 23rd le p.305, 306; Essentials of microbiology p.785]*

Laboratory diagnosis of Kala-azar

- The demonstration of parasite LD bodies in the aspirates of the spleen, liver, bone marrow or lymph node is only way to confirm visceral leishmaniasis.
- Hematological findings : T ESR, anaemia, reversed albumin-globulin ratio & leucopenia.
- Aldehyde test of Napier is a simple test widely used in India for the diagnosis of Kala-azar.
- Serological test : Direct agglutination test, rk 39 dipstick test, ELISA & Indirect fluorescent antibody test.
- Leishmanin test : This test is based on skin reaction.

600. What is exponential growth ?

a) Rapid growth in population that leads to disbalance in birth and deaths

b) Slow growth rate

c) Growth limited by limiting factors

d) None

Correct Answer - A

Ans. is 'a' i.e., Rapid growth in population that leads to dysbalance in birth and deaths [Ref O.P. Ghai 7Ve p. 93]

Exponentional Vs logistic population growth

- The population growth of a species is regulated by limiting factors (resources) that exist within the species environment.
- Population growth maintains equilibrium in all species under normal conditions bacause of these limiting factors.
- A populations overall growth rate is affected by the **birth rate** and **death rate.**
- The rate of increase within a populations is represented by the birth rate minus death rate.
- When the growth rate in a population is represented by the birth rate minus the death rate, the population remains at a constant level.

601. Vital statistics in a population are ?

a) Sex ratio

b) Age composition

c) Birth rate

d) Dependency ratio

Correct Answer - C
Ans. is 'c' i.e., Birth rate
Vital statistics are statistics concerning the important events in humon life, such **as** birth, death, marriages and migration. These are -

- Birth rates
- Death rates
- Infant mortality rate
- Fertility rate
- Mortalility rates (perinatal mortality rate, MMR, CMR etc)

602. In a town there are 2500 live birth within six month. During same period 5 women died due to peripartum infection, 5 died due to electrocution, 2 died due to obstructed labor and 3 died due to PPH. What is the MMR ?

a) 4 per 1000 live birth

b) 6 per 1000 live birth

c) 40 per 1000 live birth

d) 60 per 1000 live birth

Correct Answer - A

Ans. is 'a' i.e., 4 per 1000 live birth [Ref Park 23rd/e p.559]

In this question, pregnancy related deaths are 10 (infection, obstructed labor and PPH). Electrocution is not a pregnancy/ labor related death so excluded from numerator..

603. Gross reproduction rate is ?

a) Number of girls born to a mother in her reproductive age

b) Number of boys born to a mother in **her** reproductive age

c) Number of total children born to a mother in her reproductive age

d) Number of lives births per 1000 women

Correct Answer - A

Ans. is 'a' i.e., Number of girls born to a mother in her reproductive age [Ref Park 23'/e p.489]

Gross reproduction rate

- Average number of girls that would be born to a married woman if she experiences the current fertility pattern throughout her reproductive span (15-44 or 49 year) assuming no mortality.
- GRR in India is 1.1 (1.2 in rural areas and 0.8 in urban areas).

604. Most common route of nosocomial infection [Hospital-acquired infection] ?

a) Droplet transmission

b) Direct contact

c) Indirect contact

d) Vehicle transmission

Correct Answer - B
Ans. is `B' i.e., Direct contact *[Ref Textbook of Environmental microbiology p.819]*
There are following types of modes of transmission of hospital-acquired infections.
Contact transmission
It is the most common and most preventable means of transmission.
It is divided into two types -
Direct contact : It involves contact of body surface to body surface with a physical transfer of microorganisms. Hand contact is most common mode of transmission.
Indirect co*ntact :* It involves body surface contact with a contaminated intermediate object.

605. Which state has lowest IMR ?

a) Uttar Pradesh

b) Kerala

c) Maharashtra

d) Tamil Nadu

Correct Answer - B

Ans. is 'b' i.e., Kerala [Ref Park 23rd/e p.563-561

Kerala has lowest -

1. Infant mortality rate
2. Neonatal mortality rate
3. Post neonatal mortality rate
4. Child mortality rate

606. Behavioral surveillance survey is done in ?

a) Malaria

b) Filaria

c) AIDS

d) TB

Correct Answer - C
Ans. is 'c' i.e.,AIDS *[Ref www.cdc.gov/hiv]*
Behavioral surveillance survey is done in persons who are at high risk for **HIV infection.**
Surveillance is conducted in rotating, annual cycles in three different populations at increased risk for HIV :?
1. Gay, bisexual and other men who have sex with men (MSM cycle).
2. Persons who inject drugs (IDU cycle).
3. Heterosexuals at increased risk for HIV infection (HET cycle).

607. Drug of choice for Mass therapy under filaria control Programme ?

a) Albendazole

b) Ivermectin

c) DEC

d) Mebendazole

Correct Answer - C
Ans. is 'c' i.e.,DEC *[Ref nvbdcp.gov.in]*
Every person above 2 years of age living in the endemic area (except for pregnent women & seriously ill person) should be given Diethylcarbamazine citrate (DEC) tablets.
0-2 years N.1.
t.,2-5 years 1 tablet of 100 mg
6-14 years 2 tablets of 100 mg
15 years 3 tablets of 100 mg

608. Which of the following larvicide is used under urban Malaria Scheme ?

a) Malathion

b) Parathion

c) DDT

d) Abate

Correct Answer - D
Ans. is 'd' i.e., Abate *[Ref nvbdcp.gov.in]*
Following chemical larvicides are used in the Urban Malaria Scheme Programme
.. Temephos (Abate)
2. Bti (WP ey, 12AS) Bacillus thuringiensis israelensis.

609. Regular insectisidal spray is done when API is ?

a) > 1

b) > 2

c) < **1**

d) < 2

Correct Answer - B

Ans. is 'b' i.e., > 2 ***[Ref: Park 20 Ie p.384]***

Area with API <2→ focal spaying

Area with API >2 → regular spray

Areas having Annual Parasite Index (API) > 2

- Regular 2 rounds of insecticidal spray with DDT/Malathion/Synthetic Pyrethroids at the dose of 1, 2, 0·5 mg/sq meter respectively.
- Entomological assessment for vector behavior and development of insecticidal resistance
- Active and passive surveillance is carried outon regular basis every fortnight.
- Presumptive Treatment to all fever cases and radical treatment to all slide positive cases is given

610. Main function of sodium citrate in ORS ?

a) To increase absorption of glucose by cotransport

b) To correct electrolyte imbalance

c) To correct Acidosis

d) To correct dehydration

Correct Answer - C
Ans. is 'c' i.e., To correct Acidosis
The main function of sodium citrate is to correct acidosis ?

- "The citrate in ORS is needed for the treatment of acidosis, which frequently occurs with dehydration" "Efficacy of sodium citrate equals to sodium bicarbonate for correction of acidosis in diarrhea"

611. For post exposure prophylaxis for HIV the regimen is ?

a) Zidovodin + lamivudin for 4 weeks

b) Lamivudin + ritonavir for 4 weeks

c) Zidovudin + lamivudin + Indinavir for 4 weeks

d) Single dose zidovudin + lamivudin + Indinavir

Correct Answer - C

Ans. is 'c' i.e., Zidovudin + lamivudin + Indinavir for 4 weeks

<u>Postexposure prophylaxis</u>

- Anti-retroviral drug for post-exposure prophylaxis should be initiated as soon as possible after the exposure within the first few hours and no later than 72 hours.
- Usually combination of two nucleoside reverse transcriptase inhibitors (zidovudin and lamivudin) plus a protease inhibitor (ritonavir or indinavir) is given for 4 weeks.
- To prevent mother to child transmission, the preferred regimen is single dose of nevirapine to mother at onset of labour and to child within 72 hours of birth. Zidovudine is also used, but requires multiple dosage. Caesarean section reduces the risk of transmission by 50%.

612. According female sterlization 2014 guidelines, eligibility criteria for female sterilization are all except?

a) Age between 22-49 years

b) Should have at least 1 child

c) Unmarried woman

d) Partner is not sterilized

Correct Answer - C

Ans. is 'c' i.e.,Unmarried woman [Ref www.tvhealth.org]

Following are the eligibility criteria for female sterilization (2014) ?

1. Clients should be ever-married.
2. Female clients should be above the age of 22 years and below the age of 49 years.
3. The couple should have at least one child, whose age is above one year, unless the sterilization is medically indicated.
4. Clients or their spouses/partners must not have undergone sterilization in the past (not applicable in cases of failure of previous sterilization).
5. Clients must be in a sound state of mind, so as to understand the full implications of sterilization.
6. Mentally ill clients must be certified by a psychiatrist and a statement should be given by the legal guardian/spouse regarding the soundness of the client's state of mind.
7. A relevant medical history, physical examination and laboratory investigations need to be completed to ascertain eligibility for surgery.

613. True about post-exposure prophylaxis in HIV ?

a) Should be given in 5 days of exposure

b) Single dose nevirapine prevents mother to child transmission

c) Given for 2 weeks

d) Standard protocol is to use Any Two NRTIs with no other drugs

Correct Answer - B
Ans. is 'b' i.e., Single dose nevirapine prevents mother to child transmission *[Ref Has been explained]*

614. Smoking is preventive for ?

a) Lung cancer

b) Chronic bronchitis

c) Ulcerative colitis

d) CHD

Correct Answer - C

Ans. is 'c' i.e.,Ulcerative colitis

Smoking has been shown to have some protective effect in -

1. Ulcerative colitis
2. Parkinson's disease
3. Endometrial cancer and uterine fibroid
4. Pre-eclampsia
5. Thyroid cancer
6. Skin cancer (melanoma)
7. Psychiatric symptoms
8. Aphthous stomatitis

615. Newborn care corner is present in ?

a) NICU

b) OPD

c) Labour room

d) Wards side room

Correct Answer - C

Ans. is 'c' i.e., Labour room [Ref dghs.gov.bd]

Newborn care corner is a space within the delivery room where immediate care is provided to all newborns

Health facility	All newborns at birth	Sick newborns
MCH level I: PHC, Subcentre	Newborn care corner (NBCC) in labour room	Prompt referral
MCH level 11: CHC, First referral unit (FRU)	NBCC in labour room and operation theatre	Newborn stabilization unit (NBSU)
MCH level District hospital	NBCC in labour room and operation theatre	Special newborn care unit (SNCU)

616. Total communication means ?

a) Use of all methods of communication for advertisment

b) Use of all methods of communication for school teaching

c) Use of all methods of communication for community participation

d) Using every communication option to teach deaf child

Correct Answer - D

Ans. is 'd' i.e., Using every communication option to teach deaf child [Ref Development - behavioral pediatrics p.392]

Total communication is philosophy of educating children with hearing loss (deaf children) that incorporates all means of communication, i.e. formal signs, natural gestures, fingerspelling, body language, listening, lipreading and speech.

617. Rule of Halves is related to ?

a) Obesity

b) Burns

c) Blindness

d) Hypertension

Correct Answer - D

Ans. is 'd' i.e.,Hypertension [Ref Park 23'/e p.376]

- Rule of Halves: Hypertension is an 'Iceberg disease'. Only about half of hypertensive subjects in general population of most of the developed countries are aware of condition, only half of those aware of the problem were being treated and only half of those treated were considered adequately treated.

618. Maximum relative risk attributed by obesity to which condition ?

a) Hypertension

b) CHD

c) DM

d) Cancer

Correct Answer - C
Ans. is 'c' i.e., DM [Ref Obesity clinical management p.712]
"Recently, a meta-analysis of 89 studies examining the relative risk of obesity-related co-morbidities showed that the strongest association was with type 2 diabetes mellitus"
"Proportion of type II diabetes that is attributable to obesity was approximately 61% whereas the proportion of CHD that wast attributable to obesity was approximately 17%"

619. According to MDG child mortality has to be reduced by how, much by 2015 ?

a) One third

b) Half

c) Two third

d) One fourth

Correct Answer - C

Ans. is 'c' i.e., Two third *[Ref Park 20th/e p. 834]*

3 of 8 goals of MDG (Goal 4, 5, 6), 8 of 18 targets and 18 of 48 indicators are 'directly' health related.

1. Goal 1: Eradicate extreme poverty and hunger.
2. Goal 2: Achieve universal primary education.
3. Goal 3: Promote gender equality and empower women.
4. Goal 4: Reduce child mortality (Reduce by two-thirds the under-five mortality rate).
5. Goal 5: Improve maternal health (Reduce by three-quarters the maternal mortality ratio.
6. Goal 6: Combat HIV/AIDS, malaria and other diseases.
7. Goal 7: Ensure environmental sustainability.
8. Goal 8: Develop a global partnership for development.

620. SA-14-14-2 ?

a) Diploid cell inactivated

b) Killed vaccine

c) Live vaccine

d) Primary immunization 2 doses

Correct Answer - C
Ans. is 'c' i.e., Live vaccine[Ref Park 22"/e p. 260,261; Environmental medicine p.1812]
SA-14-142 is a cell-culture-derived live attenuated vaccine for IE. Primary immunization is given by a single dose followed by a booster after 1 years.
I am not sure about option c, because no textbook has mentioned whether, SA-14-14-2 vaccine provides life long immunity or not. But, almost all live attenuated vaccines provide life long immunity, therefore it may provide life long immunity.
"Protection for 10-12 years may be achieved with a single dose of this vaccine".

621. CAD primodial prevention is by?

a) Lifestyle change

b) Coronary bypass

c) Treatment of CAD

d) None

Correct Answer - A

Ans. is 'a' i.e., Lifestyle change ***[Ref Park 22"dle p. 339-341]***

Primordial/primary prevention is the best policy for CHD as well as other non-communicable diseases. It includes following :

1. Change in life style
2. BP monitoring
3. Salt restriction
4. Exercise
5. Dietary modification (prudent diet

622. Which of the following is a stomach poison ?

a) DDT

b) Pyrethrum

c) Paris green

d) Malathion

Correct Answer - C

Ans. is 'c' i.e.,Paris green *[Ref Park 22"/e* p. *728]*

Inectisides are divided into :?

1. Fumigants : Hydrogen cyanide, SO_2, methyl bromide, carbon disulphate.
2. Stomach poisons : Paris green, Sodium fluoride.
3. Contact (nerve) poisons : These are divided into
4. Natural : Pyrethrum, rotenone, Derris, nicotine, mineral oil.

Synthetic : These are

- Organophosphates : Malathion, parathion, fenthion, diazinon, fenitrothion, abate, chlorthion, dioxathion, chlorpyrifos, trichlorfon.
- Carbamates : Carbaryl, propoxur, dimetilan, pyrolon.
- Organochlorine : DDT, BHC (HCH), dieldrin, aldrin, chlordane, lindane, heptachlor.
- Synthetic pyrethroid (pyrethrum derivatives) : Pothrin, resmethrin, permethrin, bio permethrin, cypermethrin, cyphenothrin, cycloprothrin, deltamethrin, cyfluthrin, etofenprox.

623. The number of times the air in a living room should be recycled is ?

a) 2-3 times

b) More than 6 times

c) 4 times

d) None

Correct Answer - A

Ans. is 'a' i.e., 2-3 times *[Ref Park 22"d/e p. 685]*

Standards of ventilation

- Cubic space:- Fresh air supply 3000 cubic feet per person per hour (range is 300-3000 c.ft).
- Air change:- 2 to 3 times per hour in living room and 4 to 6 times per hour in work rooms and assemblies.
- Floor space:- 50-100 Sq. ft. per person (heights over 10 to 12 feet are not taken into account).

624. No of inpatient beds in PHC ?

a) 6

b) 10

c) 20

d) 25

Correct Answer - A

Ans. is 'a' i.e., 6 ***[Ref Park 22"d/e p. 845]***

PHC 6 beds

CHC → 30 beds

625. PQLI is

a) Objective component of level of living

b) Subjective component of level of living

c) Objective component of quality of life

d) Subjective component of quality of life

Correct Answer - D

Ans. is 'd' i.e., Subjective component of quality of life

Subjective component

- The subjective component of well being is quality of life.
- The level of living and standard of living are objective criteria of well being, while the quality of life comprises the individual's subjective evaluation of these.
- The recent definition of quality of life is as follows "a composite measure of physical mental and social well being as perceived by each individual or group of individuals."
- WHO definition is as follows "the condition of life resulting from the combination of the effects of the complete range of factors such as those determining health, happiness, education, etc."
- The index for quality of life is "Physical quality of life index (PQLI)".
- The PQLI is an attempt to measure the quality of life or well-being of a country.
- Physical quality of life index consolidates three indicators:-
- Literacy rate
- Infant mortality rate
- Life expectancy at age 1 year (LEI)
- PQLI ranges from 0 to 100.
- PQLI in India is 65.

626. Only disease which is eradicated worldwide ?

a) Small pox

b) Polio

c) Diphtheria

d) Measles

Correct Answer - A
Ans. is 'a' i.e., Small pox
Eradication implies termination of all transmission of infection by extermination of infectious agent.
It is an absolute process, i.e. all or none phenomenon.
It literally means "tearing out by roots".
Eradication is a "global term" used only cessation of infection from the whole world.
Smallpox is the only disease that has been eradicated.
Other diseases which are candidates for global eradication Polio, measles, dracunculiasis, diphtheria.

627. Category 4 biomedical waste include ?

a) Human anatomical waste

b) Animal waste

c) Cytotoxic drug

d) Waste sharps

Correct Answer - D

Ans. is 'd' i.e., Waste sharps *[Ref Park 23"[1]/e* p. *793-794]*

BMWs in India are managed under 'Biomedical Waste Management and Handling Rules 1998' with exercising powers 6, 8, 25 of Environmental Protection Act 1986 (under Ministry of Environment and Forests).

Schedules are :-

1. Schedule I : Categories of BMW, their treatment and disposal.
2. Schedule II : Color coding and type of container for BMW disposal.
3. Schedule III : Labels for BMW containers/bags.
4. Schedule IV : Labels for transport of BMW containers/bags.
5. Schedule V : Standards for treatment and disposal of BMW.
6. Category No. 7 → Solid (waste generated from disposal items other than the waste sharps such as tubings, catheters, intravenous sets etc.)

628. Median incubation period is ?

a) Maximum time from exposure to development of symptoms in all cases

b) Minimum time from exposure to development of symptoms in all cases

c) Time from exposure to development in 50% of cases

d) None of the above

Correct Answer - C

Ans. is 'c' i.e., Time from exposure to development in 50% of cases

Incubation period is the *time interval between invasion by an infectious agent and appearnace of the first sign and symptom.*

'Median incubation period' is the time required for 50% cases to occur following exposure.

629. Safety officer is recommended where factory has how many workers [In factory Act] ?

a) 250 or more

b) 500 or more

c) 1000 or more

d) 2000 or more

Correct Answer - C

Ans. is 'c' i.e., 1000 or more *[Ref Park 24th/e* p. *852]*

Following standards are recommended :

1. A minimum of 500 Cu ft of space for each worker (not taking into account space more than 14 feet above the group level).
2. For factories installed before the 1948 Act, a minimum of 350 Cu ft of space per worker.
3. A safety officer in every factory where in 1000 or workers are employed
4. A welfare officer in every factory where in 500 or more workers are employed.
5. A canteen where in more than 250 or more workers are employed.
6. Creches where in more than 30 women workers are employed

630. Standpipe in rural oreas is an example of which principle of primary health care?

a) Equitable distribution

b) Community porticipation

c) Intersectoral coordination

d) Appropriate technology

Correct Answer - C

Ans. is 'c' i.e., Inter-sectoral coordination *[Ref Primary heath care online; Park 23'/e p. 742]*

- Public works, eg. ensuring an adequate supply of safe water (Stand pipe) and basic sanitation, comes under inter-sectoral coordination (multi-sectoral approach).

Intersectoral coordination

- The primary health care is not provided by health sector alone.
- It involves all other related sectors of national and community development, in particular agriculture, animal husbandry, food, industry, education, housing, public works (e.g. an adequate supply of safe water and basic sanitation), communication and other sectors.

631. A population of 50 children is having 10 immunized against chickenpox. 5 children developed chickenpox on march 2017. Other 28 children developed chickenpox within next 2 week what is the SAR of chickenpox?

a) 60%

b) 70%

c) 80%

d) 90%

Correct Answer - C

Ans. is 'c' i.e., 80% [Ref: Park Mlle p. 105-107 & 23ra/e p.100]

- Primary cases in the question → 5 (developing chickenpox on same day)
- Immune children → 10
- Susceptible contacts → Total children - (Primary cases + immunized children) = 50 - (5+10) = 35
- No. of susceptible developing desease = 28

No of susceptible developing disease x 100 = 80%
Total number of susceptiblesx

632. Minimum floor space recommended for worker according to Factories Act?

a) 1000 Cu ft

b) 500 Cu ft

c) 200 Cu ft

d) 100 Cu ft

Correct Answer - B

Ans. is 'b' i.e., 500 Cu ft *[Ref Park 24th /e p. 852]*

The first Indian Factories act dates as for back as 1881.

The act was revised and amended several times, the lates being the factories (Amendment) act, 1987.

Following standards are recommended

1. A minimum of 500 Cu ft of space for each worker (not taking into account space more than 14 feet above the group level).
2. For factories installed before the 1948 Act, a minimum of 350 Cu ft of space per worker.
3. A safety officer in every factory where in 1000 or workers are employed
4. A welfare officer in every factory where in 500 or more workers are employed.
5. A canteen where in more than 250 or more workers are employed.
6. Creches where in more than 30 women workers are employed.

633. Denominator in under -5 proportional mortality rate?

a) Number of death under 5 years of age

b) Mid-year under - 5 population

c) Total deaths

d) Mid- year population

Correct Answer - C
Ans. is 'c' i.e., Total deaths

634. World heart day is celebrated on ?

a) 29th September

b) 28th September

c) 8th September

d) 1st December

Correct Answer - A
Ans. is 'a' i.e., 29th September *[Ref Internet]*
29th September → World heart day
28th September → World rabies day
8th September → World literacy day
Ph December → World AIDS day

635. Berkesonian bias is a type of ?

a) Admission rate bias

b) Interviever bias

c) Information bias

d) Recall bias

Correct Answer - A

Ans. is 'a' i.e., Admission rate bias [Ref: Park 24thle p. 78-79]

Berkesonian bias

- Berksonian bias results from the greater probability of hospital admission for people with two or more disease than for people with one disease. So, it is also known as *admission rate bias.*

636. True about iceberg of disease ?

a) Clinician is concerned with hidden portion of iceberg

b) Tip of the iceberg represent clinical cases

c) Tetanus is classical example

d) Screening is done for Tip of the iceberg

Correct Answer - B

Ans. is 'b' i.e., Tip of the iceberg represent clinical cases

Iceberg of disease

* Disease in a community may be compared with an iceberg.
* The floating *tip of the iceberg* represents what the physician sees in the community, *i.e. clinical cases (Diagnosed case, symptomatic case of the clinically apparent case).*
* The vast *submerged portion of the iceberg* represents the hidden mass of disease, i.e. latent, inapparent, presymptomatic and undiagnosed cases and carriers in the community.
  - *The "waterline" represents the demarcation between apparent and inapparent disease.*
  - An epidemiologist is concerned with the hidden portion of the iceberg whereas the clinician is concerned with the tip of the iceberg.
  - Screening is done for a Hidden portion of the iceberg whereas diagnosis is done for the tip of the iceberg.
* *The iceberg phenomenon of disease is not shown by Rabies, Tetanus, Rubella, and Measles.*
* The clinician concerned only with the tip of iceberg, i.e symptomatic cases that are seen in clinical treatment, this can result in inaccurate view of the nature and causes of a disease results because the minority of the cases are studied (hidden cases:-

submerged portion of iceberg is not studied) --> Clinician's Fallacy.

637. Which of the following is Socratic method of communication?

a) Lectures

b) Group discussion

c) Group discussion

d) Mass media

Correct Answer - B

Ans. is 'b' i.e., Group discussion ***[Ref Park 24th Ie p. 892***

Two-way communication (socratic method)

It is method of communication in which both the communicator and the audience take part and the information is transferred in both direction.

Examples→ Group discussion, Panel discussion, symposium, workshop, conferences.

638. Live influenza vaccine is given by which route ?

a) Intradermal

b) Subcutaneous

c) Intramuscular

d) Intra nasal

Correct Answer - D

Ans. is 'd' i.e., Intranasal *[Ref Park 24thie* p. *168]*

The routes of important vaccines are :?

- Subcutaneous : Measles, rubella, killed influenza, killed cholera, IPV, yellow fever.
- Intramuscular : Mumps, killed influenza, typhoid Vi-polysaccharide, DPT (deep intramuscular), rabies, IPV. iii)Intradermal : BCG, rabies.
- Nasal : Live influenza.
- Oral : OPV, oral cholera, oral typhoid (typhoral).

639. PERT is which type of management technique?

a) Based on behavioral science

b) Qualitative

c) Quantitative

d) None of the above

Correct Answer - C
Ans. is 'c' i.e.,Quantitative
Management in human organization activity is simply the act of getting people together to accomplish desired goals and objectives. There are two major types of methods of management.
1. Methods based on behavioural sciences.
2. Quantitative methods.

640. Which of the following is true ?

a) Two live vaccines should not be given together

b) Live and killed vaccine should not be given together

c) Immunoglobolin should not be given for at least 6 weeks when a live vaccine is administered

d) Live vaccine should not be given for 12 weeks if immunoglobin has been given

Correct Answer - D

Ans. is 'd' i.e., Live vaccine should not be given for 12 weeks if immunoglobin has been given.

Two live vaccines can be given simultaneously, but they should be given at different sites. Otherwise they should be given at an interval of at least 3 weeks (if administered at same site).

Live and killed vaccine can be given together.

Live vaccines should not normally be given for 12 weeks after an injection of normal human Ig and if a live vaccine has already been given, Human Ig injection should be deferred for 2 weeks.

641. In RNTCP microscopic center is recommended for how much population ?

a) 5000

b) 10000

c) 50000

d) 100000

Correct Answer - D
Ans. is 'd' i.e., 100000
The RNTCP designated 'Microscopy centre' is established for 100000 population in planes (50000 in hilly and moutain areas). For every 5 microscopy centers (500000 population), there is one Senior TB laboratory supervisor (STLS). STLS rechecks all positive slides and 10% of all negative slides. Sputum microscopic examination during case finding is done in designated miroscopy centers.
One tuberculosis unit is established for 500000 population in planes (250000 population in hilly/tribal areas).
There is one state drug store (SDS) for every 50 million population.

642. HALE is used to measure

a) Disability adjusted life expectancy

b) Healthy life expectancy

c) Quality adjusted life expectancy

d) Expectancy free of disability

Correct Answer - B

Ans. is 'b' i.e., Healthy life expectancy

Health-Adjusted life expectancy (HALE)

- HALE is the indicator used to measure a healthy life expectancy.
- HALE is based on the life expectancy at birth but includes an adjustment for time spent in poor health.
- It is the equivalent number of years in full health that a newborn can expect to live based on current rates of ill health and mortality.

643. During investigation of an epidemic, the area is declared free of epidemic when?

a) Twice the incubation period of the disease since occurrence of the last case

b) Thrice the incubation period of the disease since occurrence of the last case

c) The longest incubation period for the disease

d) Incubation period for the disease plus two standard deviations

Correct Answer - A

Ans. is 'a' i.e., Twice the incubation period of the disease since occurrence of the last case *[Ref Park 22"d /e* p. *123]*

There are following steps in the investigation of an epidemic *:?*

1. Verification of diagnosis : This is the first step in investigation of an epidemic.
2. Confirmation of existence of an epidemic : By comparing with disease frequencies during same period in previous years.
3. Defining the population at risk.
4. Rapid search for all cases and their characteristics : Search for new cases is carried out everyday, till the area is declared free of epidemic; this period is usually taken as "twice the incubation period of the disease since the occurance of last case".
5. Data analysis.
6. Formulation of hypothesis.

644. Colored kit for STD treatment is which type of approach?

a) Preventive

b) Symptomatic

c) Syndromic

d) Rehabilitative

Correct Answer - C

Ans. is 'c' i.e., Syndromic *[Ref Park 23' /e. p. 332-336]*

In 1988, World Health Organization introduced the concept of *Syndromic management'.*

- In syndromic management, diagnosis and treatment is not based on specific diseases identified by testing but rather on syndromes, which is a group of clinical findings. Treatment is generally given for all or at least most commonly seen diseases or organisms that could cause that syndrome.
- Pre-packed colour coded STI/RTI kits have been provided for free supply to all designated STI/RTI clinics.
- Kit 1 → Grey, for urethral discharge, ano-rectal discharge, cervicitis.
- Kit 2 → Green, for vaginitis
- Kit 3 → White, for genital ulcers
- Kit 4 → Blue, for genital ulcers
- Kit 5 → Red, for genital ulcers
- Kit 6 → Yellow, for lower abdominal pain
- Kit 7 → Black, *for scortal swelling.*

645. Specific content in malaria vaccine is?

a) Gametocytic protein

b) Polysaccharide sheath

c) Sporozoite protein

d) Lipoprotein envelop

Correct Answer - C

Ans. is 'c' i.e., Sporozoite protein [Ref Internet]

- Circumsporozoite protein (CSP) is a secreted protein of the sporozoite stage of the malaria parasite (plasmodium sp) and the antigenic target of RTS,S, a pre-erythrocytic malaria vaccine currently undergoing clinical trails. The amino- acid sequence of CSP consists of an immunodominant central repeat region flanked by conserved motifs at the N-and C-termini that are implicated in protein processing as the parasite travels from the mosquito to the mammalian vector.
- The structure and function of CSP is highly conserved across the various strains of malaria that infect humans non-human primates and rodents.
- It can first be detected in large quantities as sporozoites are forming within oocysts residing the midgut walls of infected mosquitoes Upon egression from mature oocysts, sporozoits begin migrating to the salivary glands, and CSP is known to be an important mediator of this process. Additionally CSP is involved in hepatocyte binding in the mammalian host.
- Here the N-terminus and central repeat region initially facilate parasite binding. Once the hepatocyte surface proteolytic cleavage at region 1 of the N-terminus exposes the adhesive domian of the C-terminus, thereby priming the parasites for invasion of the liver.

646. Jai Vigyan National Mission is for?

a) Adolescent girls health

b) Mother & child health [MCH]

c) Science & technology

d) Child labour prevention

Correct Answer - C

Ans. is 'c' i.e., Science & technology *[Ref Information p. 1997-98]*

The Union Minister for human resource Development, Dr. Murli Manohar Joshi, has said that scientific Institutions would take up 21 important development projects as part of the Jai Vigyan National Mission with focus on science and technology. These projects would be in areas such as food security, energy conservations, health care, disaster management and bio-diversity. Scientific and R and D institutions would take up one project in 1999. All the projects would be given green channel treatment with procedures relaxed he said while participating at the annual sessions of the 86^{t5} Indian Science Congress in Chennal on Jan.3.

The minister said he had directed the department of Bio-technology to institute 10 awards every year for outstanding young scientists in biosciences. This would encourage high quality research of excellence and relevance. As achieving excellence was dependent in innovative talents which in turn needed identification and nurturing from an early age, a new scheme to select under 18 youngsters of outstanding talent and to provide them with necessary ambience and opportunities for harnessing their talent and been instituted.

647. Role of magnesium [Mg] in OPV?

a) Adjuvant

b) Preservative

c) Stabilizar

d) Antiinfective

Correct Answer - C
Ans. is 'c' i.e., Stabilizer *[Ref www.who.int]*
"Polio Sabin (oral) vaccine is a magnesium chloride stabilized preparation of live attenuated polio viruses of sabin strains type 1, 2, er 3" Stabilizers
These are used to confirm product quality or stability. Examples are potassium or sodium salts, lactose, human serum albumin, gelatin and bovine serum albumin

648. The difference between descriptive and analytic studies?

a) Descriptive studies are used to test hypothesis

b) Analytic studies are used to formulate a hypothesis

c) Descriptive studies are first phase in epidemiology

d) Analytic studies observe distribution of disease

Correct Answer - C

Ans. is 'c' i.e., Descriptive studies are first phase in epidemiology *[Ref Park 24thie p. 67-75]*

Descriptive studies are first phase of an epidemiological investigation. These studies are concerned with observing the distrubution of disease in time, place and person. Descriptive studies are used to formulate eitological hypothesis.

Analytical studies are the second major type of epidemiological studies (after descriptive studies). It contrast to descriptive studies that look at entire population, in analytic studies, the subject of interest is the individual within the population (except in ecological study). The object is not to formulate, but to test hypothesis.

In experimental studies, epidemiologist actively intervene to change a disease determinant or progression of disease. Experimental studies are used for testing hypothesis.

649. Which of the following defines movement across scioeconomic status.

a) Social equality

b) Social upliftment

c) Social mobility

d) Social insurance

Correct Answer - C

Ans. is 'c' i.e., Social Mobility ***[Ref Park 23' le p. 688 & 22"d/e p. 639]***

Social mobility is the degree to which an individual's family or group's social status can change throughout the course of their life through a system of social hierarechy, i.e. Social mobility refers to movement of individuals/families across different socioeconomic levels.

650. Strength of association of outcome and risk factor is measured by?

a) Relative risk

b) Attributable risk

c) Population attributable risk

d) None of the above

Correct Answer - A

Ans. is 'a' i.e., Relative risk ***[Ref: Park 24`Ve*** **p.** ***83]***

Relative risk is a direct measure of the strength of association between suspected cause and effect. For example a relative risk of 2 means that the incidence rate is 2 times higher in the exposed group as compared with unexposed -> i.e., a 100% increase in risk. On the other hand, attributable risk indicates the extent which is attributed by risk factor (exposure) to disease. For example attributable risk of 90% means 90 percent of disease among exposed is due to exposure to risk factor.

In simple words :?

- Relative risk indicates the increased percentage of risk of developing a disease, if person is exposed to risk factor.
- Attributable risk indicates the percentage of disease which is attributed by risk factor among the exposed.
- Relative risk is a better index than is attributable risk for assessing the etiological role of a factor in disease.

651. Important measure for National health policy?

a) Relative risk

b) Odds ratio

c) Incidence

d) Attributable risk

Correct Answer - D

Ans. is 'd' i.e.,Attributable risk *[Ref Park 24th/e p. 83]*

Relative risk Vs Attributable risk

- Relative risk is a direct measure of the strength of association between suspected cause and effect. For example a relative risk of 2 means that the incidence rate is 2 times higher in the exposed group as compared with unexposed - i.e., a 100% increase in risk.
- On the other hand, attributable risk indicates the extent which is attributed by risk factor (exposure) to disease. For example attributable risk of 90% means 90 percent of disease among exposed is due to exposure to risk factor.
- In simple words :-
- Relative risk indicates the increased percentage of risk of developing a disease, if person is exposed to risk factor.
- Attributable risk indicates the percentage of disease which is attributed by risk factor among the exposed.
- Relative risk is a better index than is attributable risk for assessing the etiological role of a factor in disease.
- On the other hand, attributable risk gives a better idea than does relative risk of the impact of successful preventive or public health programme might have in reducing the problem. That means attributable risk reflect the public health importance better than

relative risk.

652. Range of flight of Aedes mosquito is ?

a) 1 km

b) Less than 100 m

c) 400 m

d) 10 kms

Correct Answer - B

Ans. is 'b' i.e., Less than 100 m [Ref Park 23'/e p. 771 & 22"^{d}/e p. 715]

Aedes do not fly over long distances; usually less than 100 metres (110 yards). Anopheles → 3 - 5 Kms

Culex → 11 Kms

Aedes → 100 m

653. A study that gives the prevalence of delusion in the elderly at a given point of time?

a) Case-control study

b) Cohort study

c) Cross-sectional study

d) Ecological study

Correct Answer - C

Ans. is 'c' i.e., Cross-sectional study

Cross-sectional studies

- A cross-sectional study is the simplest form of an observational study.
- It is also known as a prevalence study.
- It is based on a single examination of a cross-section of the population at one point of time.
- The results of this examination can be projected on the whole population.
- The cross-sectional study tells about the distribution of a disease rather than its etiology.
- Cross-sectional studies can be thought of as providing a snapshot of the frequency and characteristic of a disease in a population at a particular point in time.
- A cross-sectional study is more useful for chronic disease, as the population is studied at once, no follow-up is required.

654. 100 individuals are diagnosed with lung cancer in a population of 100000. Out of 100 patients, 80 were smokers and 20000 were smokers in totals population. What is PAR?

a) 60

b) 75

c) 80

d) 90

Correct Answer - B

Ans. is 'b' i.e., 75 ***[Ref Park 24 1th Ie*** **p.** ***83]***

In the given question :

- Incidence in total population = 100 per 1 lac
- Number of exposed = 20000 (All exposed)
- Number of non-exposed = 80000 (100000 - 20000)
- Non-exposed having lung cancer=20 (out of 100 patients 80 were smoker. Thus 20 are noneexposed)
- Incidence among non-exposed = 20 per 80000 or 25 per 100000

655. Number of holes in mosquito net [per sq. inch] ?

a) 50

b) 150

c) 100

d) 200

Correct Answer - B

Ans. is 'b' i.e., 150 [*Ref Park 24th/e p. 810 & 23'/e p. 773]*

The best pattern of mosquito net is the rectangular net.

There should not be a single rent in the net.

The Size of openings in the net is of utmost importance, the size should not exceed 0.0475 inch in any diameter.

The number of holes in one square inch in usually 150.

656. Not a primary air pollutant?

a) SO_2

b) CO,

c) Ozon

d) VOCs

Correct Answer - C

Ans. is 'c' i.e.,Ozone *[Ref Park 24^{t}Ve p. 770]*

Air pollution is the introduction of chemicals particulate matter, or biological material into the atmosphere that cause harm or discomfort to humans or other living organisms, or damages the natural environment. An air pollutant is known as a substance in the air that can cause harm to humans and the-environment.

657. True about standardization are all except?

a) Most commonly used for age differences

b) Direct standardization is used when population is large

c) Age specific rates are required in indirect standardization

d) All are correct

Correct Answer - C

Ans. is 'c' i.e., Age specific rates are required in indirect standardization *[Ref: Park 23"/e p. 58]*

Indirect standardization

- When the population is small (or outcome is rare) the number of events observed can be small.
- In that circumstance, indirect standardized methods can be used to produce a standardized mortality rate (SMR) or a standardized incidence rate (SIR).
- In indirect standardization, one computes the number of events (mortality) that would have been expected if the event rates (mortality rate) from the standard population had applied in the study population, i.e. age specific rates of standard population are applied to study population (opposite to direct standardization).
- Study population is used to provide age specific death rates.
- Within each age stratum, one multiplies the age specific rate of standard population by the number of people in the study population to determine the number of cases that would have expected if that were the rate in the study group
- These expected numbers are added up across all age groups and divided into the observed number to yield the SMR.
- Advantage of indirect standardization is that age specific rates of

study population are not required.

658. Standardization is most important for?

a) Sex distribution

b) Age distribution

c) Disease distribution

d) None of the above

Correct Answer - B

Ans. is 'b' i.e., Age distribution ***[Ref Park 23rd Ie p. 58]***

Standardization is most commonly used for age.

A standardizated death rate (ASDR) is the best mortality indicator.

'Crude death rate' is to be standardized for age for comparison of two population, as age composition is different.

659. Standardized death rates are used because health?

a) For valid comparisom of two groups of different health determinants

b) Calculations are more accurate

c) To avoid selection bias

d) All of the above

Correct Answer - A

Ans. is 'a' i.e., For valid comparison of two groups of different health determinants *[Ref Park 23rd /e p. 58]*

Standardization (or adjustment) of rates is used to unable the valid comparison of groups that differ regarding an important health determinant (most commonly age). For example, if we want to compare the death rates of two different populations with different age composition, the crude death rate is not right yardstick because rates are only comparable if the populations upon which they are based are comparable.

660. Pulses are deficient in ?

a) Methionirfe

b) Lysine

c) Threonine

d) All

Correct Answer - A

Ans. is 'a' i.e.,Methionine *[Ref : Park 23'/e* p. *628 & 21"/e* p. *578]*

Some amino acids are deficient in a particular food, called limiting amino acids. For example, cereals and wheat are deficient in threonine and lysine, pulses are mainly deficient in methionine and cysteine, and maize is deficient in tryptophan and lysine.

Supplementary action of proteins : If two or more food items eaten together, their proteins supplement the deficient amino acid of each other. For example cereals are deficient in threonine and lysine, whereas pulses are deficient in methionine and cystein. If both are taken together, their proteins complement each other and provide a more balanced and complete protein intake.

661. All are true about natural experiments, except?

a) Researcher has no control over the allocation of subjects

b) James lind experiment is an example

c) Includes Randomized controlled trials [RCTs]

d) All are correct

Correct Answer - C

Ans. is 'c' i.e., Includes Randomized controlled trials [RCTs] ***[Ref Modern epidemiology p. 397]***

Natural experiments are those in which exposure to the event or intervention of interest has not been manipulated by researcher. The individuals exposed to the experimental and control conditions are determined by nature or by other factors outside the control of the investigators.

When a naturally occurring event or situation is exploited by a researcher to help answer a research question, it is called a natural experiment. The researcher has little or no control over the situation that is being observed.

A good example of natural experiment is one by James Lind in 1747 on the prevention of scurvy among sailors. He compared the effects of different acidic substances, ranging from vinegar to cidr, on grups of afflicted sailors, and found that the group who from vinegar to cidr, on groups of afflicted sailors, and found that the group who were given oranges and lemons had largely recovered from scurvy after 6 days.

Other important example is John Snow's natural experiment on cholera linked with contaminated water.

RCT is not natural experiment as researcher allocate the individuals

in study and control group by randomization.

662. Most common nutritional problem in India?

a) Low birth weight

b) Fluorosis

c) Iran deficiency anemia

d) Vitamin A deficiency

Correct Answer - C

Ans. is 'c' i.e.,Iron deficiency anemia *[Ref Park 24th Ie* p. *677, 661-667]*

The major nutritional problem in India are :

1. Low birth weight
2. Iodine deficiency disorders (IDD)
3. Protein energy malnutrition
4. Endemic fluorosis
5. Vitamin A deficiency
6. Lathyrism
7. Iron deficiency anemia

Iron deficiency anemia is the most widspread among these.

663. In a study a patient does not know the nature of drug [whether a placebo or curative drug] he is taking. The researcher knows the drug type to be given to the individuals in study. Types of blinding in this study is ?

a) Single

b) Double

c) Triple

d) Combined double /triple

Correct Answer - A

Ans. is 'a' i.e., Single *[Ref Park 24'1* p. 78]*

Single blinding	Study subjects are not aware of the treatment they are receiving
Double blinding	Study subjects as well as investigator are not aware of the treatment study subjects are receiving
Triple blinding	Study subjects, investigator as well as analyzer are not aware of the treatmc study subjects are receiving

664. An 70 kg farmer is consuming 56 grams proteins, 275 grams carbohydrate and 60 grams lipids. He consuming?

a) Less calories

b) More calories

c) Adequate calories

d) Connot be commented

Correct Answer - A
Ans. is 'a' i.e., Less calories *[Ref Read below]*
Protein and carbohydrate both provide 4 cal per gram and fat provides 9 cal per gram.
Thus the farmer is taking (cal or Kcal per day) = (56 x 4) + (275 x 4) + (60 x 9) = 1864

665. Mid year population is estimated on ?

a) 1st March

b) 1st July

c) 1st April

d) 15th August

Correct Answer - B

Ans. is 'b' i.e., 1St July ***[Ref Park 22"/e p. 58 & 21"/e p. 52]***

Denominator in crude death rate is mid year population, which is estimated on first of July of an year.

666. Poor man's iron source is?

a) Almond

b) Grapes

c) Soya

d) Jaggery

Correct Answer - D

Ans. is 'd' i.e., Jaggery *[Ref Park 24th/e p. 661 & 23rd/e p. 623]*

There are two major forms of iron :?

1) Haem-iron

- It is better absorbed but is less important source of iron in Indian diet. It is mainly found in foods of animal origin, e.g. liver, meat, poultry and fish.

2) Non-haem iron

- It is poorly absorbed but is the important source of iron in Indian diet. It is mainly found in foods of vegetable origin, e.g. cereales, green leafy vetetables, legumes, nuts, oilseeds, juggery, and dried fruits.
- Among dry fruits, cashew nut has maximum iron (9%) followed by almonds (7%), and pistachos (7%).
- Iron of milk is low in all mammalian species.
- Jaggery is considered as poor man's iron source. It contains a good amount of iron along with vitamin-A.

667. Meningococcal vaccine contains ?

a) 50 mcg of polysccharide of each strain

b) 100 mcg of polysccharide of each strain

c) 1000 mcg of polysccharide of each strain

d) 5000 mcg of polysccharide of each strain

Correct Answer - A

Ans. is 'a' i.e., 50 mcg of polysaccharide of each strain *[Ref Park 24th/e p. 176]*

Vaccines are available for group A, C, Y and W-125. There is no group B vaccine available at present. Vaccines are prepared from capsular polysaccharide.

Bivalent (A, C), trivalent (A, C, W135), and tetravalent (A, C, W135, Y) vaccines are available.

The vaccines contain 50 mcg of polysaccharide of each individual strain.

668. Dual record system is useful for estimation of?

a) Literacy

b) Fertility

c) Population density

d) Sex ratio

Correct Answer - B

Ans. is 'b' i.e., Fertility *[Ref Park 24th/e p. 878]*

Sample registration system (SRS), initiated in mid 1960s provides reliable estimates of birth (fertility) and death (mortality) rates at state and national levels.

It is a dual record system,consisting of continuous enumeration of birth and death by an enumerator and an independent survey every 6 months by an investigator supervisor.

Main objective of SRS is to provide reliable estimates of birth rate, death rate and infant mortality rate at the natural division level for rural areas and at state level for urban areas.

Infant mortality rate is the decisive indicator for estimation of sample size at natural division.

Sample design for SRS is uni-stage stratified simple random sample. SRS now covers entire country.

669. How many doses of monovalent meningococcal 'C' vaccine is given in Infants ?

a) One

b) Two

c) Three

d) Four

Correct Answer - B

Ans. is 'b' i.e., Two *[Ref Park 24th/e p. 176]*

Monovalent Men A conjugate vaccine should be given as a single dose to individuals 1-29 years of age.

For monovalent Men C conjugate vaccine, one single intramuscular dose is recommended for children aged > 12 months, teenagers and adults.

Children 2-11 months of age require 2 dose administration at an interval of at least 2 months and a booster about 1 year thereather.

Quadrivalent vaccines are administered as a single dose to individuals aged 2 years.

670. Which does not have *Live births as* denominator?

a) Infant mortality rate

b) Neonatal mortality rate

c) Child mortality rate

d) Child death rate

Correct Answer - D

Ans. is 'd' i.e., Child death rate *[Ref Park 24thle p. 608-612]*

CDR = No. of deaths of children aged 1-4 years / Total No. of children aged 1-4 years.

671. Secondary attack rate of mumps:?

a) 75%

b) 85%

c) 95%

d) < 50%

Correct Answer - B

Ans. is 'b' i.e., 85% ***[Ref Park 23'/e p. 147 & 22"d/e p. 139-140]*** **SAR of some important infectious diseases**

Measles	**80%**
Rubella	**90 - 95%**
Chicken pox	**90%**
Pertussis	**90%**
Mumps	**86%**

672. Jai Vigyan Mission mode project in India is for?

a) Measles

b) TB

c) Rheumatic fever

d) STD

Correct Answer - C

Ans. is 'c' i.e., Rheumatic fever ***[Ref Park 24^{t}Ve p. 397]***

Jai Vigyan Mission Mode project on Community Control of RF/RHD in India is being carried out with four main components, viz. to study the epidemiology of streptococcal sore throats, establish registries for RF and RHD, vaccine development for streptococcal infection and conducting advanced studies on pathological aspects of RF and RHD.

673. Isolation period of TB ?

a) 2 days after treatment

b) 1 week after treatment

c) 2 weeks after treatment

d) 3 weeks after treatment

Correct Answer - D

Ans. is 'd' i.e., 3 weeks after treatment ***[Ref Park 24th/e p. 129]***

Period of isolation recommended

Tuberculosis (sputum +) → 2 weeks adult, 6 weeks paediatric.

674. Prevalence of RHD in India in 5-15 years age group?

a) 1-2 per 1000

b) 5-7 per 1000

c) 10-12 per 1000

d) 13-15 per 1000

Correct Answer - B

Ans. is 'b' i.e., 5-7 per 1000 ***[Ref Park 24th/e p. 397]***

- In India, RHD is prevalent in the range of 5-7 per thousand in 5-15 years age group and there are about 1 million RHD cases in India.
- RHD constitutes 20-30% of hospital admissions due to CVD in India.
- Streptococcal infections are very common especially in children living in under -privileged conditions, and RF is reported to occur in 1-3 per cent of those infections.

675. Sensitivity of a screening test tells about

a) Percentage of disease people among those with a positive test

b) Percentage of disease people among those with a negative test

c) Percentage of healthy people among those with a negative test

d) Percentage of healthy people among those with a positive test

Correct Answer - A

Ans. is 'a' i.e., Percentage of disease people among those with a positive test

Sensitivity: Ability of a screening test to identify correctly all those who have the disease (Cases).

Specificity: Ability of a screening test to identify correctly all those who don't have the disease (healthy).

Positive predictive value (PPV): Ability of a screening test to identify correctly all those who have the disease, out of all those who test positive on a screening test.

Negative predictive value (NPV): Ability of a screening test to identify correctly all those who don't have the disease, out of all those who test negative on a screening test.

When a screening test is used to diagnose a disease, the test outcome can be positive (diseased) or negative (healthy), while the actual health status of the person may be different. In that setting :

- True positive → Diseased people correctly diagnosed as diseased.
- False positive → Healthy people wrongly identified as diseased.
- True negative → Healthy people correctly identified as healthy.
- False negative → Diseased people wrongly identified as healthy.

676. If effective treatment for a disease is introduced in a community, what will be the effect on incidence [I] and prevalence [P] ?

a) No change in P & I

b) Both P & I will decrease

c) P will decrease & I will increase

d) P will decrease & I will remains the same

Correct Answer - D

Ans. is 'd' i.e.,P will decrease & I will remains the same *[Ref Park 24th/e p. 66 & 23rdie p. 62]*

New effective treatment will cure the patient and thereby decrease the duration of disease.

So, new effective treatment will affect the duration of disease.

Incidence measures the rate at which new cases are occurring in a population, It is not influenced by duration. So, new effective treatment will have no effect on incidence.

On the other hand, prevalence will decrease due to decrease in duration of disease.

677. WHO VISION 2020 initiative includes ?

a) Corneal ulcer

b) Trachoma blindness

c) Diabetic retinopathy

d) Vernal kerato Conjunctivitis

Correct Answer - B

Ans. is 'b' i.e., Trachoma blindness

After the realization that unless blindness control efforts are intensified, the prevalence of blindness will double by 2020 AD, the WHO along with an International Partnership committee launched the Vision 2020 Initiative in 1995.

The diseases identified for global elimination include : *?*

1. Cataract blindness
2. Trachoma blindness and transmission
3. Onchocerciasis
4. Avoidable causes of childhood blindness
5. Refractive errors and low vision

Indian vision of 2020 includes the following seven diseases.

1. Cataract blindness
2. Glaucoma
3. Trachoma blindness and transmission
4. Diabetic retinopathy
5. Childhood blindness
6. Corneal blindness
7. Refractive errors and low vision

678. A screening test has sensitivity of 90% and specificity of 99%. The prevalence of disease under investigation is 5 per 1000 population. What is the PPV of the given screening test?

a) 10

b) 70

c) 33

d) 99

Correct Answer - C

Ans. is 'c' i.e.,33 ***[Ref Park 23rd/e p. 139 & 22"d/e p. 132; Hopefield biostatistics 4th/e p. 49]***

Positive predictive value is related to sensitivity specificity and prevalence.

This relationship is represented by Baye's theorem : -

679. Major reservoir of KFD ?

a) Human

b) Squirrels

c) Cattle

d) Monkey

Correct Answer - B
Ans. is 'b' i.e.,Squirrels
KFD, also known as 'monkey disease' is a hemorrhagic fever caused by flavivirus belonging to group-B arbovirus. Disease is common in four districts of Karnataka : Shimoga, North Kannda, South Kanada and Chikamagaloor. KFD was first recognized in 1957 in Shimoga district of Karnataka.
Major vector for transmission of KFD is hard tick (Haemophysalis spinigera and H. turtura). But, soft tick can also transmit the disease, especially outside the India.
Rats and squirrels are the major reservoir. Monkey acts as amplifying host and man is incidental dead-end host, there is no man-to-man transmission.

680. Color of box containing drugs for treatment of category I of TB -

a) Red

b) Blue

c) Yellow

d) Green

Correct Answer - A

Ans. is 'a' i.e.,Red ***[Ref Park 24th/e p. 199]***

681. Best indicator for spread of TB in a community?

a) Annual infection rate

b) Prevalence of infection

c) Case rate

d) Incidence of new cases

Correct Answer - A

Ans. is 'a' i.e., Annual infection rate *[Ref Park 24th Ie p. 191-195 & 23'/e p. 177]*

The following epidemiological-indices are used in tuberculosis problem measurement and programme strategy

1. Prevalence of infection

- It is the percentage of individuals showing positive tuberculin test.

2. Incidence of infection (Annual infection rate)

- It is the percentage of population under study who will be newly infected by M.tuberculosis among the non-infected of the preceding survey during the course of one year.
- It expresses the attacking force of tuberculosis and is also known as tuberculin conversion index i.e. percentege of new people becoming tuberculin positive.
- In developing countries, *every 1% of annual infection rate is said to correspond to 50 new cases* of smear positive pulmonary TB, per year, for 100000 general population.
- It is the best indicator for evalution of TB problem and its trend.
- In India, annual infection rate/tuberculin conversion index is 1.7%.

3. Prevalence of disease or case rate

- It is the percentage of individuals whose sputum is *positive for tubercle bacilli* on *microscopic examination.*

- It is the best available practical index to estimate the number of infectious cases or case load in a community.

4. Incidence of new cases

- It is the percentage of new TB cases (confirmed by bacteriological examination) per 1000 population occurring during one year.

5. Prevalence of suspected cases

- This is based on X-ray examination of chest.

6. Prevalence of drug resistant cases

- It is the prevalence of patient excreting tubercle bacilli resistant to anti-tubercular drugs.

7. Mortality rate

- The number of deaths from tuberculosis every year per 1,000 population.

682. Antiboiotic of choice for severe pneumonia in 1 year all child?

a) Cotrimoxazole

b) Ciprofloxacin

c) Benzyl penicillin

d) Tetracycline

Correct Answer - C

Ans. is 'c' i.e., Benzyl penicillin *[Ref Park 24th/e p. 181,182]*

Antibiotics of choice for treatment of acute respiratory infections in children aged 2 months - 5years

.. No pneumonia (Cough or cold) → No antibiotic
2. Pneumonia (not severe) -s cotrimoxazole
3. Severe pneumonia - Benzyl penicillin or ampicillin or chloramphenicol
4. Very severe disease 4 Chloramphenicol

Antibiotics of choice for treatment of acute respiratory infections in infants younger than 2 months

.. No pneumonia (Cough or cold) 4 No antibiotic
2. All pneumonia (severe or not severe) 4 (Benzyl penicillin or ampicillin) plus gentamycin.

683. Healthy carrier is seen in?

a) Measles

b) Rubella

c) Meningococcal meningits

d) Influanza

Correct Answer - C

Ans. is 'c' i.e., Meningococcal meningitis *[Ref Park 24th/e p. 103-106 & 23"1/e p. 95, 96]*

Temporary carrier

Temporary carriers shed the infectious agent for short period of time.

This category may include

Incubatory carriers :	Measles, mumps, polio, pertussis (whooping cough), influenza, diphtheria, Hepatitis B.
Convalescent carriers :	Typhoid, cholera, diphtheria, Pertussis (whooping cough), dysentery.
Healthy carriers :	Polio, Cholera, meningococcal meningitis, Salmonellosis, diphtheria

Chronic carrier

Chornic carriers excrete the infectious agent for indefinite period.

Examples : Typhoid, hepatitis B, dysentery, malaria, gonorrhoea, cerebrospinal menigitis, Diphtheria.

684. Infectivity of convalescent carrier of cholera lasts for?

a) 1-5 days

b) 1-2 weeks

c) 2-3 weeks

d) 4-5 weeks

Correct Answer - C

Ans. is 'c' i.e., 2-3 weeks

There are following types of carrier in cholera :

- Incubatory : Shed vibrios only in the brief incubation period of 1-5 days.
- Convalescent : Shed vibrios for 2-3 weeks.
- Healthy or contact carrier : Has had subclinical infection and shed vibrios for less than 10 days.
- Chronic carriers : Can shed vibrios for months or years and may have persistent infection in gall bladder

685. Which vaccine is used to prevent death from pneumonia in children?

a) Measles vaccine

b) Rubella vaccine

c) Chickenpox vaccine

d) Influenza viral vaccine

Correct Answer - A

Ans. is 'a' i.e.,Measles vaccine *[Ref Park 24th/e p. 182]*

Three vaccines have potential of reducing death from pneumonia :-

- Measles vaccine
- HIB vaccine (Haemophilus influenzee type B)
- Pneumococcal vaccine

These vaccines work to reduce the incidence of bacterial pneumonia.

686. Diagnosis of filariasis is confirmed most commonly?

a) Clinical features

b) Detection of microfilariae

c) PCR

d) Seralogical test

Correct Answer - B

Ans. is 'b' i.e., Detection of microfilariae ***[Ref Essentials of clinical microbiology - 188]***

Detection of microfilariae (MO

- The most commonly used method for diagnosis of filariasis is detection of microfilariae in blood smear. The blood collection should be done at night because of nocturnal periodicity of microfilariae
- The microfilariae of W. bancrofti and B. malayi occuring in India display a nocturnal periodicity, i.e., they appear in large number at night and retreat from the blood stream during the day. This is a biological adaptation to the nocturnal biting habits of vector mosquitoes. The maximum density of microfilariae in blood is reported between 10 pm and 2 am. When the sleeping habits of the host are altered, a reversal in periodicity has been observed.
- Thick film is most commonly used method for detection of microfilariae.
- Concentration technique by membrane filter concentration (MFC) method is the most sensitive method which can detect low density of microfilariae in blood.

687. Maximum spread of malaria occurs in which month?

a) March-April

b) January-February

c) April-May

d) September - October

Correct Answer - D

Ans. is 'd' i.e., September - October ***[Ref Park 24th/e p. 272-276]***

Malaria is a protozoal disease caused by infection with parasite of genus plasmodium and transmitted to man by certain species of infected female Anopheline mosquito.

Definitive host - Mosquito (sexual life cycle).

Intermediate host Man (Asexual cycle).

Season In India maximum prevalence is from July to November.

Reservoir - With possible exception of chimpanzees in tropical Africa, which may carry the infection with P.malariae, no other animal reservoir is known to exist. Man harbouring sexual forms (gametocytes) is the only reservoir.

Extrinsic incubation period (in mosquito) 10 to 20 days. It is the period of time required for the development of parasite from gametocyte to sporozoite stage (infective stage to man) in the body of mosquito.

688. Not true about diphtheria vaccine?

a) Can be given as pentavalent vaccine

b) For infant DPT is the vaccine of choice

c) First dose is given at 6 weeks of age

d) all of these

Correct Answer - D
Ans. is 'D All of these, [Ref Park 24thie p. 172]
Diphtheria vaccine is a toxoid.
It is given as trivalent vaccine DPT - Preparation of choice for immunization of infant
First dose is given at 6 weeks of age
Pentavalent vaccine provides protection to a child from 5 life threatening disease-diphtheria, pertussis, tetanus, hepatitis B and haemophilus influenza type b (Hib). Giving pentavalent vaccine reduces the number of pricks to a child. When used, it replaces Hepatitis B and DPT primary vaccination schedule at 6, 10 and 14 weeks in the immunization programme, except that the birth dose of hepatitis B and booster doses of DPT are continued.

689. For diagnosis of TB, Sputum microscopy has ?

a) High sensitivity & high specificity

b) High sensitivity & low specificity

c) Low sensitivity & high specificity

d) Low sensitivity & low specificity

Correct Answer - D

Ans. is 'd' i.e.,Low sensitivity & low specificity

- Most rapid method of diagnosis for TB Sputum microscopy.
- But, sputum microscopy has low sensitivity and specificity.
- Most reliable method for diagnosis of TB -> Culture of tubercular bacilli.

690. Varicella zoster virus infection is more likely to occur in which of the following month?

a) March

b) August

c) October

d) November

Correct Answer - A
Ans. is 'a' i.e., March [Ref: CECIL Vol. 1, p.1840]
"Varicella occurs most commonly during the late winter and spring months, the peak being about in March"

691. Most common influenza virus causing disease?

a) Type A

b) Type B

c) Type C

d) Type D

Correct Answer - A

Ans. is 'a' i.e., Type A [Ref Park 24th/e p. 163-166]

- There are three viral subtypes : Type A (causes all pandemics and most epidemics); type B; and type C (not circulating currently).
- Currently the influenza viruses circulating in the world are : H, N, of type A (causes swine flu); H2N2 of type A; H3N2 of type A ; H5N, of type A (causes birdflu or avian influenza); 117 N9of type A (caused epidemic of avian influenza in China in 2013); and type B.
- Influenza shows cyclic trend with epidemic occuring every 2-3 years in case of influenza - A and every 4-7 years in case of influenza-B. Pandemics are caused by only influenza - A every 10-15 years.
- Influenza affects all ages and both sexes.
- Source of infection of influenza is a clinical case or subclinical case.
- Major reservoir of influenza virus exists in animal and birds.

692. Minimum accepted interval between two doses of DPT vaccine?

a) 2 weeks

b) 4 weeks

c) 6 weeks

d) 8 weeks

Correct Answer - B
Ans. is 'b' i.e., 4 weeks [Ref Park 24th/e p. 172]
Total three doses are given in primarly immunization with an interval of 4 weeks between three doses. First booster is given at 16-24 months with second booster at 5-6 years.
DPT, → 6 weeks of age
DPT, → 10 weeks of age
DPT, → 14 weeks of age
DPTim,, → 16-24 months of age
ter DPTB → 5 years of age

693. Mammalian reservoir for R. prowazekii ?

a) Rodents

b) Dog

c) Cattle

d) Humans

Correct Answer - D

Ans. is 'd' i.e., Humans [Ref Park 24th/e p. 316, 319]

Disease	Agent	Insect vector	Mammalian reservoir
Typhus group			
a) Epidemic typhus	R. prowazekii	Louse	Humans
b) Murine typhus (Endemic typhus)	R. typhi	Flea	Rodents
c) Scrub typhus	R. Tsutsugamushi	Mite	Rodents

694. 'Secrete of national health lies in the homes of people' statement by ?

a) Indira Gandhi

b) Abhraham lincon

c) Bhore

d) Florence Nightingale

Correct Answer - D
Ans. is 'd' i.e., Florence Nightingale [Ref Housing and planning review p. 35]
Florence Nighingale pointed out nearly a hundrade years ago, "the secret of national health lies in the homes of people".

695. Which occupational exposure may cause sterility in females ?

a) Lead

b) Carbon monoxide

c) Mercury

d) Agricultural insecticides

Correct Answer - D

Ans. is 'd' i.e.,Agricultural insecticides *[Ref Handbook of pesticide toxicology p.* 787

Pesticides exposure can cause -

1. Cancers :- In multiple organ systems
2. Endocrine abnormalities
3. Infertility and sterility
4. Brain damage
5. Birth defects :- Oral clefts, neural tube defects, heart defects, limb defects
6. Respiratory disorders :- Wheezing, bronchitis, asthma
7. Organ failure :- Chronic kidney disease or interstitial nephritis
8. Skin irrita*tion*

696. Work sampling ?

a) Sampling done for individual work

b) Assessment of time spent by workers in work

c) Done in very short period

d) None

Correct Answer - B
Ans. is 'b' i.e., Assessment of time spent by workers in work
Work sampling is a technique used to investigate the proportion of total time devoted to the various activities that constitute a job or work situation.

697. School health checkup comes under -

a) Disrict hospital

b) PHC

c) CHC

d) School health committee

Correct Answer - D

Ans. is 'd' i.e., School health committee [Ref Park 22"^{d}/e p. 534, 535]

The school health committee (1961) in India recommended medical examination of children at the time of entry and thereafter every 4 years.

698. All are occupational cancers except ?

a) Lung

b) Bladder

c) Breast

d) Liver

Correct Answer - C
Ans. is 'c' i.e.,Breast
Asbestos → Mesotheliom a
Arsenic → Skin, Lung, Liver
Benzene → Leukemia
Benzidine → Urinary bladder
Berylium → Lung
Cadmium → Lung
Chromium → Nasal Sinus, Lung

699. M/C Heavy Metal poisoning in The World?

a) Lead

b) Arsenic

c) Mercury

d) Cadmium

Correct Answer - A
Ans. is 'a' i.e.,Lead *[Ref Park 22""/e* p. *752]*
More industrial workers are exposed to lead than any other toxic metal.

700. Organized group of people with social relationship?

a) Community

b) Association

c) Society

d) None

Correct Answer - C
Ans. is 'c' i.e. Society *[Ref Park 22'/e* p. *622]*
A society is a body of individuals of species, generally seen as a community or group, that is outlined by the bounds of functional interdependence, comprising also possible characters or conditions such as cultural identity, social solidarity or eusociality.
Human societies are characterized by patterns of relationships between individuals that share a distinctive culture or institution.
The importance of society lies in the fact that it controls and regulates the behaviour of the individual both by law and customs.

701. DALE is replaced by ?

a) DALY

b) HALE

c) OALY

d) None

Correct Answer - B

Ans. is 'b' i.e., HALE [Ref Park 20th/e p. 24]

HALE (Health - Adjusted life expectancy) :- The name of the indicator used to measure healthy life expectancy has been changed from disability adjusted life expectancy (DALE) to health adjusted life expectancy (HALE).

HALE is based on the life expectancy at birth but includes and adjustment for time spent in poor health. It is most easily understood as the equivalent number of years in full health that a newborn can expect to live based on current rates of ill health and mortality.

702. Social psychology is ?

a) Human relationships & behaviour

b) Psychology of individuals in society

c) Cultural history of man

d) None

Correct Answer - B
Ans. is 'b' i.e.,Psychology of individuals in society *[Ref: Park 22"/e* p. *622]*
Study of human relationships and human behaviour → Sociology
Psychology of individuals living in human society → Social psychology
Study of physical, social and cultural history of man → Anthropology

703. Best study for definitive cause of disease ?

a) Case-control

b) Cohort

c) Ecological

d) Cross-sectional

Correct Answer - B

Ans. is 'b' i.e., Cohort

Amongst the given options Cohort study is best to test the association between risk factor and disease.

Here are the different epidemiological studies with decreasing order of accuracy to test the association between risk factor and disease :-

- Systematic review and meta-analysis --> Overall most reliable
- Randomized controlled trials (controlled clinical trails) --> Most reliable individual study.
- Retrospective (Non-concurrent/historic) Cohort study.
- Prospective (concurrent) Cohort study.
- Case control study
- Cross-sectional study
- Ecological study

704. Results of any study are better defined in ?

a) Cost effectiveness

b) Cost benefit

c) Both are same

d) None

Correct Answer - A

Ans. is 'a' i.e., Cost effectiveness [Ref. Park 22"dle p. 814]

The study results can be evaluated by cost-benefit analysis and cost-effectiveness analysis.

In cost-benefit analysis all costs and benefits are evaluated in terms of money, i.e. economic benefits of the programme/ study are compared with the cost of programme. The main drawback with this technique is that the benefits in the health field canot always be expressed in monetary term. For example birth or death prevented, or illness avoided etc. Hence the scope of applying this method is rather vague.

Cost-effective analysis is more promising tool for application in the health field. It evaluates how best to spend a given amount of money to achieve specific goals, i.e. benefits are expressed in terms of results achieved, e.g. number of lives saved, or the number of days free from disease.

705. Source of environmental radiation are all except?

a) CO

b) Radium

c) Uranium

d) Radon

Correct Answer - A
Ans. is 'a' i.e., CO *[Ref Park 22'/e* p. *690]*
Environmental ratiation are of two types ?
1. Terrestrial
2. Atmospheric

Terrestrial radiation

- Radioactive elements such as thorium, Uranium, radium and an isotop of potassium (K40) are present in man's invironment, e.g., soil, rocks, boiling.
- It is estimated that man derives about 50 mrad per year from terrestrial radiation.
- Area exists (Kerala in India) where the rock formation containing uranium, it can be as high as 2000, mrad a year.

Atmospheric radiation

- These are radioactive gases radon and thoron

706. Propagative cycle is seen in ?

a) Plague

b) Filaria

c) Malaria

d) All

Correct Answer - A
Ans. is 'a' i.e., Plague [Ref Park 22"/e p. 94]
Propagative → Plague bacilli in rat fleas
Cyclo-developmental → Micorfilaria in mosquito.
Cyclo-propagative → Malarial parasite in mosquito.

707. Fenthion is ?

a) Space spray

b) Residual spray

c) Stomach poison

d) Fumgant

Correct Answer - A

Ans. is 'a' i.e., Space spray *[Ref Park 22"d le p. 727]*

Residual sprapy

- In residual spray, spraying of houses with residual insectisides is done.
- Residual insectisides remains active over extended periods i.e., they have residual action even after the time of spray.
- Commonly used residual insectisides are → Malathion, DDT, Lindane, propoxure (OMS-33)

Space spray

- Space sprays are those where the insecticidal formation is sprayed into the atmosphere in the form of a mist or fog to kill insect.
- Action is short lived and temporary since there is no. residual action.
- The most commonly used space spray insecticide is Pyrethrum.
- Now residual insectisides are also being used as residual spray by new equipment for ultra-low volume (ULV) space spraying. Melathion and fenthion are used for this purpose.

708. It waste contain toxic substances, organic load is measured by ?

a) Biological oxygen demand

b) Chemical oxygen demand

c) Suspended solid

d) None

Correct Answer - B

Ans. is 'b' i.e., Chemical oxygen demand *[Ref Park 22"d/e p. 708]*

" The strength of sewage is expressed in terms of :

1. Biochemical oxygen demand
2. Chemical oxygen demands
3. Suspended solids demand

Biochemical Oxygen demand

- It is the most important test done on sewage. It is defined as the amount of oxygen absorbed by a sample of sewage during a specified period, generally 5 days, at a specified temperature, generally 20 deg. **C,** for the aerobic destruction or use of organic matter by living organisms. BOD value ranges from about I mg per litre for natural waters to about 300 mg per litre for untreated domestic sewage. If the BOD is 300 mg/1 and above, sewage is said to be strong; if it is 100 mg/I, it is said to be weak."

Chemical oxygen demand (COD)

- The COD measures the oxygen equivalent of that portion of the organic matter in a sample which is susceptible to oxidation by a strong chemical oxidiser. If wastes contain toxic subsances, COD may be the only method for determining the organic load.

Suspended solids

- If the amount of suspended solids is 100 mg/1, the sewage is said to

be weak, if the amount is 500 mg/dl the sewage is said to be strong

709. Argemain oil contamination of mustard oil can be detected by ?

a) Phosphatase test

b) Nitric acid test

c) Coliform cunel

d) Methylene blue test

Correct Answer - B

Ans. is 'b' i.e., Nitric acid test *[Ref. Park 22"d/e p. 610]*

Detection of Argemone oil :

1. Nitric acid test: brown orange red colour/ring shows it is present minimum concentration of Argemone oil required is about 0.2%.
2. Paper chromatography test - The most sensitive test

710. Avidin has affinity for ?

a) Folic acid

b) Thiamine

c) Biotin

d) Riboflavin

Correct Answer - C

Ans. is 'c' i.e., Biotin *[Ref. Harper 29^{i}Ve* p. 539]

People who eat abnormally large amount of uncooked egg white may have biotin deficiency because it contains avidin, a protein that binds biotin and prevents its absorption

711. Daly requirment of vitamin K ?

a) 3 mg/kg

b) 0.3 mg/kg

c) 0.03 mg/kg

d) 1 mg/kg

Correct Answer - C

Ans. is 'c' i.e., 0.03 mg/kg *[Ref. Park 22"d/e* p. *572]*

Vitamin A→ 600 mcg retinol

Vitamin B_7 (Thiamine)--> 0.5 mg per 1000 Kcal of energy intake

Vitamin B, (Riboflavin) → 0.6 mg per 1000 Kcal of energy intake

Vitamin B, (Niacin) → 6.0 mg per 1000 Kcal of energy intake

Vitamin 13_5 (Pantothenic Acid) → 10 mg

Vitamin B_6 (Pyridoxine) →2 mg

Vitamin B, (Folic Acid) →200 mcg

Vitamin B12(Cobalamin) →1 mcg

Vitamin D 100 IU (2.5 mcg calciferol)

Vitamin E (Tocopherol) ⇒ → 0.8 mg per gm of essential fatty acids

Vitamin K → 0.03 mg per kg

712. Maximum linolenic acid is present in ?

a) Coconut oil

b) Soyabean oil

c) Groundnut oil

d) S afflower oil

Correct Answer - D

Ans. is 'd' i.e., Safflower oil *[Ref Park 22"d /e p. 566]*

The richest source of linoleic acid is safflower oil. Sources of linoleic acid in decreasing order are safflower oil > cornoil > Sunflower oil > Soyabean oil > Sesame oil > ground nut oil.

713. Bitot's spot prevalence as public health problem -

a) > 1%

b) > 2%

c) > 0.5%

d) None

Correct Answer - C

Ans. is i.e., c. > 0.5% *[Ref Park 22"d/e p. 571]*

Night blindness

Bitot's spots	> 0.5%
Corneal xerosis/corneal ulceration/keratomalacia	> 0.01%
Corneal ulcer	> 0.05%
Serum retinol (less than 10 mcg/dl)	> 5%

714. Blood screening is not done for ?

a) HIV

b) HBV

c) EBV

d) HCV

Correct Answer - C

Ans. is 'c' i.e.,EBV

Screening recommended in all countries	**Selective screening in some countries**
HIV	Malaria
HBV	HTLV
HCV	CMV
Syphilis	Chagas disease

715. Most common method of sterilisation practised in India ?

a) Female sterilization

b) Male sterilization

c) Both

d) None

Correct Answer - A

Ans. is 'a' i.e., Female sterilization *[Ref Park 22"/e p. 454]*

<u>During 2010-2011</u>

- Total sterilization - 5.0 million
- Female sterilization (tubectomy) 4.78 million
- Male sterilization (vasectomy) 0. 219 million

716. Amount of diphtheria toxoid in DT is ?

a) 5 Lf

b) 10 Lf

c) 15 Lf

d) 25 Lf

Correct Answer - D

Ans. is 'd' i.e., 25 Lf [Ref. Park 22"dle p. 153]

Oridinary (Pediatric) DPT/DT vaccines contain 25 Lf of diphtheria toxin.

For immunizing adults and older children (>12 years), dT is used which contains 2 Lf of diphtheria toxin.

DPT vaccine

- It contains components for immunization against three diseases, i.e., toxoid of diphtheria and tetanus, and killed B. pertussis. Pertussis component enhances the potency of diphtheria toxoid.
- Aluminium salts (hydroxide or phosphate) are used as adjuvant to increase immunogenicity. Thiomersal is used as preservative.
- Usual storage temperature for DPT vaccine in cold chain is +2 to +8°C, stored in refrigerator. It should never be stored in deep freezer (should not be frozen) and if it gets frozen accidently, vaccine should be discarded.
- Exposure to sunlight should be avoided. Open vials which have not been fully used should be discarded at the end of session.
- Vaccine is given by intramuscular route in the middle third of anterolateral aspect of thigh.
- Optimum age to start DPT vaccination is 6 weeks after birth.
- Total three doses are given in primarly immunization with an interval of 4 weeks between three doses. First booster is given at 16-24

months with second booster at 5-6 years.

717. Highest funding for reproductive health is by -

a) UNFPA

b) UNICEF

c) ILO

d) None

Correct Answer - A
Ans. is 'a' i.e., UNFPA *[Ref Maternal health fifth report session 2007-2008]*
UNFPA works with a range of partners to promote reproductive health in India.
It pools a significant proportion of its country programme resources in the reproductive and child health II (RCH II) programme, aimed at reducing maternal mortality and child mortality, as well as provision of range of contraceptive services.
UNFPA also delivers technical assistance for effective implementation of RCH-II programme at the national as well as state level particularly in the state of Rajasthan, M.P. Maharashtra, Orrisa and Bihar.

718. 1955 Hepatitis outbreak in Delhi ?

a) A

b) B

c) C

d) E

Correct Answer - D
Ans. is 'd' i.e., E [Ref Internet]
Hepatitis E was first documented in New Delhi in 1955 when 29000 cases of icteric hepatitis occured.

719. For Asian population B.M.I. true is ?

a) Different from international values to define obesity

b) Increased morbidity at lower values

c) Increased morbidity at higher values

d) Obesity is > 25 kg/m2

Correct Answer - B

Ans. is 'b' i.e., Increased morbidity at lower values *[Ref* WHO *expert consultation]*

A WHO expert consulation addressed the debate about interpretation of recommended body-mass index (BMI) cut-off points for determining overweight and obesity in Asian populations, and considered whether population specific cut-off points for BMI are necessary.

They reviewed scientific evidence that suggests that Asian populations have different associations between BMI, percentage of body fat and health risks than do European population.

The consultation concluded that the proportion of Asian population with a high risk of type 2 diabetes and cardiovascular disease is substantial at BMI, lower than existing WHO cut-off points for overweight (25mg/kg^2). And Asians generally have a higher percentage of body fat in comparison to white people of that same age, sex and BMI.

However, available data do not necessarily indicate a clear BMI cut-off part for all Asians for overweight or obesity.

The cut-off point for observed risk varies from 22 kg/m^2 to 25 kg/m^2 in different Asian population, for high risk it varies from 26 kg/m^2 to 31 kg/m2.

For many Asian populations, additiond trigger points for public

health action were identified as -

1. 18.5 kg/m^2 → 4 Underweight
2. 18.5 - 23 kg/m^2 → Increased but acceptable risk
3. 23 - 27.5 kg/m^2 → Increased risk
4. 27.5 kg/m^2 → Higher high risk

720. Which is the main vector of Dengue ?

a) A. aegypti

b) A schleri

c) Culex

d) Anopheles

Correct Answer - A
Ans. is 'a' i.e., A. aegypti [Ref Park 22"/e p. 225]
Dengue fever is caused by arboviruses (at least 4 serotypes have been recognized)
It is transmitted by Aedes (Aedes aegypti is the main vector).
The reservoir of infection is both man and mosquito.
The transmission cycle is Man-mosquito-man
Dengue fever occurs both epidemically and endemically. Epidemics starts in rainy season and are usually explosive.
Aedes mosquito becomes infective by feeding on a patient from the day before onset to the 5^{th} day of illness

721. Nicotine responsible for oral cancer is ?

a) 10%

b) 40%

c) 90%

d) 60%

Correct Answer - C
Ans. is 'c' i.e., 90% *[Ref Park 22"/e* p. *358]*
Approximately 90% of oral cancers in South East Asia are linked to tobacco chewing and tobacco smoking" -- Park

722. Second most common STD after gonococcus ?

a) Chylamydia

b) HSV

c) HIV

d) Syphilis

Correct Answer - A

Ans. is 'a' i.e., Chlamydia [Ref Park 21^{51}/e p. 304]

Five classical STDs are syphilis (T. pallidum), gonorrhoea (N. gonorrhoeae), chanchroid (H. ducreyi), lymphogranuloma venerum (chlamydia trachomatis), and donovanosis (calymmatobacterium granulomatosis).

Most common STD in India is herpes genitalis (20%) followed by chancroid (11%), viral warts/HPV (11%), syphilis (11%) and gonorrhoea (9%).

Overall (in world) most common STD is chlamydia followed by gonorrhoea.

723. Which of the following studies have given coronary risk factor ?

a) Framingham

b) Stanford study

c) North Kerala

d) MONICA

Correct Answer - A

Ans. is 'a' i.e.,Framingham *[Ref Park 22"d ie* p. *342]*

Option a, b & c all three are risk factor intervention trials. However, option a is the best answer *:?*

- "Since 1951, one of the best known large prospective studies, the Framingham study, has played a major role in establishing the nature of CHD risk factors and their relative importance.
- Standford-three community study .→ To determine whether community **health education** can reduce the risk of cardiovascular disease, this study was undertaken in 1972.
- The North Kerelia Project: → This is a **multiple risk factor intervention** trial establish the nature of CHD risk factors and their relative importance. Largest prospective study which started since 1951.

724. Chandlers index for Hookworm, when it is health problem ?

a) > 300

b) > 200

c) > 100

d) > 50

Correct Answer - A
Ans. is 'a' i.e., > 300 [Ref Park 21"/e p. 221]
Below 200 → Hookworm infection is not much of significance
200 - 250 → Potential danger
250 - 300 -- Minor public health problem
Above 300 → Important public health problem

725. Which index of obesity does not include height?

a) BMI

b) Ponderal's index

c) Broca's index

d) Corpulence index

Correct Answer - D

Ans. is i.e., D. Corpulence index [Ref Park 22nd le p. 369, 370]

Different indices use to determine obesity are

i) Body mass index (Qetelet's index)

- It is used internationally as reference standard for assessing the prevalence of obesity.
- It is dependent both on height and weight (has been explained earlier).

ii) Ponderal index

- It is dependent both on height and weight.
- It is defined as height (cm) divided by cube root of weight (kg).

iii) Broca indexà deal weight = Height (cms) - 100

iv) Corpulence indexà It is dependent only on weight (height independent. It should be 1.2.

726. HIV post exposure prophylaxis should be started within?

a) 1-2 hrs

b) 14 hrs

c) 18 hrs

d) 72 hrs

Correct Answer - A
Ans. is 'a' i.e., 1-2 hrs
Anti-retroviral drug for post-exposure prophylaxis should be initiated as soon as possible after the exposure within the first few hours and no later than 72 hours.
So, the best answer here is 1-2 hours (first few hours).

727. What should be the value of BMI to be considered as “Lethal” in men?

a) 12

b) 18

c) 13

d) 14

Correct Answer - C

Answer: C – 13

BMI Value of 13 is considered as “Lethal” in men.

- Body mass index (BMI) is an estimate of total body fat mass
- Simply an index of weight for height.

Formula:

- Weight in kilograms divided by the square of height in meters.
- Body mass index = Weight (kg)/(Height)2 (m)

Uses:

- Used to classify and define underweight, overweight & obesity in adults.

Classification & Metrics:

- World Health organization categorized BMI values into:

Classification	BMI value
Normal weight	18.5 to 24.9 kg/m^2
Underweight	<18.5
Pre-obesity (Pre-OB)	25 to 29.9 kg/m^2
Obesity (OB) Class I obesity Class II obesity	> 30 kg/m^2 30.0 - 34.9 kg/m^2

Class III obesity (Morbid form)	35.0 - 39.9 kg/m^2 More than 40 kg/m^2

BMI value considered lethal for Men is 13

Females withstand and survive even at lower BMI rate up to 11.

728. Incidence of a disease is 4 per 1000 of population with duration of 2 years. Calculate the prevalence?

a) 8/1000

b) 4/1000

c) 2/1000

d) 6/1000

Correct Answer - A
Ans. A. 8/1000
Prevalence = (Incidence Rate) x (Average Duration of Disease)

729. Cytotoxic and expired drug disposal is done by which method?

a) Dumping

b) Autoclave

c) Landfill

d) Burning

Correct Answer - C

Ans.C. Landfill

Colour coding	Type of Container	Waste Category	Treatment options
Yellow	Plastic Bags	Human and animal wastes, Microbial and Biological wastes and soiled wastes (Cat 1,2,3 and 6)	**Incineration/ Deep Burial**
Red	Disinfected container/ Plastic bags	Microbiological and Biological wastes, Soiled wastes, Solid wastes (Cat 3,6,7)	Autoclave/ Microwave/ Chemical Treatment)
Blue/ White/ Transparent	Plastic bag, Puncture proof container	**Waste sharps and solid waste** (Cat 4 &7)	Autoclave/ Microwave/ Chemical Treatment Destruction and Shredding
		Discarded	

Black	**Plastic bag**	**medicines, Cytotoxic drugs, Incineration ash and chemical waste** (Cat 5,9 & 10)	Disposal in secured land fills
Green	Plastic Container	General waste such as office waste, food waste & garden waste	Disposed in secured landfills

730. For NRR to be 1 couple protection rate should be?

a) 50%

b) 60%

c) 55%

d) 75%

Correct Answer - B

Ans. B. 60%

Couple Protection Rate (CPR)

- It is an indicator of the prevalence of contraceptive practice in the community
- Definition: the percentage of eligible couples effectively protected against childbirth by one or the other approved methods of family planning
- Sterilization
- IUD
- Condom
- OCP's
- NRR = 1 can be achieved only if the CPR > 60%

731. New RNTCP software online to monitor TB control programme is-

a) NIKSHAY

b) NICHAY

c) E- DOTS

d) NIRBHAI

Correct Answer - A
Ans. A.NIKSHAY
To keep a track of the TB patients across the country, the Government of India has introduced a system called NIKSHAY. The word is combination of two Hindi words NI and KSHAY meaning eradication of tuberculosis.
NIKSHAY (www.nikshay.gov.in) is a web enabled application, which facilitates monitoring of universal access to TB patients data by all concerned.
The system has been developed jointly by the Central TB Division of the Ministry of Health and Family Welfare and National Informatics Centre (NIC) and it was launched by the Government of India in June 2012 with issue of required administrative directions from Central TB Division for use of NIKSHAY

732. Study unit of ecological study is

a) Population

b) Patient

c) Community

d) Case

Correct Answer - A
Ans. A.Population
In ecological studies the unit of observation is the population or community.
Disease rates and exposures are measured in each of a series of populations and their relation is examined.
Often the information about disease and exposure is abstracted from published statistics.

733. In a screening test for DM out of 1000 population, 90 were positive. Then the gold standard test was done in which 100 were positive. Calculate the sensitivity?

a) 90/100

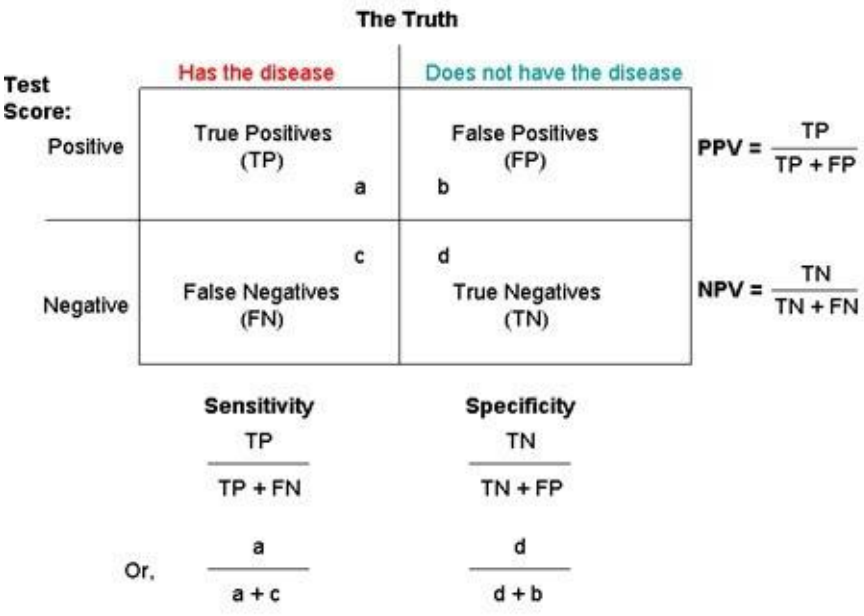
b) 100/110

c) 80/100

d) 100/100

Correct Answer - A

Ans. A. 90/100



So, True positive (a)= 90
False negative(c)=10

Sensitivity = a/(a+c)=90/100

734. What is the mass chemoprophylaxis for meningococcal meningitis ?

a) Rifampicin

b) Chloramphenicol

c) Tetracycline

d) Penicillin

Correct Answer - A

Ans. A.Rifampicin

Recommended Chemoprophylaxis for High-Risk Close Contacts:

Age	Dose	Duration	Cautions
RIFAMPICIN:			
<1 month	5 mg/kg	Oral every 12 hrs 2 days	
>1 month	10 mg/kg	Oral every 12 hrs 2 day	Not recommended for use in pregnancy
CEFTRIAXONE:			
<15 years	125mg	IM single dose	
>15 years	250 mg	IM single dose	
CIPROFLOXACIN			
>18 years	500 mg	Oral single dose	Not recommended for use in pregnancy

735. Which among the following is an active form of chlorination?

a) Hypochlorite ion

b) Hydrogen chloride

c) Hypochlorous acid

d) Chloride ion

Correct Answer - C
Ans. C. Hypochlorous acid
The disinfecting action of chlorine is predominantly due to hypochlorous acid.
Hypochlorous acid is the most effective form of chlorine and it is almost 70-80 times more effective than hypochlorite ions.

736. Kala-Azar is found in all endemic areas except.

a) West Bengal

b) UP

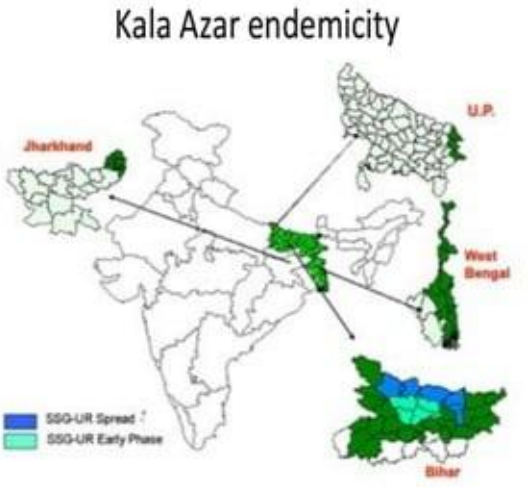
c) Bihar

d) Assam

Correct Answer - D

Ans. D. Assam

UP , West Bengal Bihar And Jharkhand are the endemic states of kala Azar



737. Risk among exposed to risk among non exposed is defined to be –

a) Relative risk

b) Odds ratio

c) Attributable risk

d) None of the above

Correct Answer - A

Ans.A. Relative risk

$$RR = \frac{P \text{ event when exposed}}{P \text{ event when not exposed}}$$

In statistic and epidemiology , **relative risk** or **risk ratio** (**RR**) is the ratio of the probability of an event occurring (for example, developing a disease, being injured) in an exposed group to the probability of the event occurring in a comparison, non-exposed group.

- RR = 1 means that exposure does not affect the outcome
- RR < 1 means that the risk of the outcome is decreased by the exposure
- RR > 1 means that the risk of the outcome is increased by the exposure

738. Pasteurization is done at-

a) 73 ^{o}C For 20 min

b) 63 ^{o}C For 30 min

c) 72 ^{o}C For 30 seconds

d) 63^{o}C For 30 seconds

Correct Answer - B

Ans.B. 63 ^{o}C For 30 min

Pasteurization of milk, widely practiced in several countries, notably the United States, requires temperatures of about 63° C (145° F) maintained for 30 minutes or, alternatively, heating to a higher temperature, 72° C (162° F), and holding for 15 seconds (and yet higher temperatures for shorter periods of time).

739. Ideal time gap between 2 live vaccination -

a) 2 weeks

b) 4 weeks

c) 8 weeks

d) 12 weeks

Correct Answer - B
Ans.B.4 weeks
If live parenteral (injected) vaccines (MMR, MMRV, varicella, zoster, and yellow fever) and live intranasal influenza vaccine (LAIV) are not administered at the same visit, they should be separated by at least 4 weeks.

740. Susceptible person developed disease within range of IP after coming in contact with primary case -

a) Secondary attack rate

b) Case fatality rate

c) Primary attack rate

d) Tertiary attack rate

Correct Answer - A
Ans. A. Secondary attack rate
Secondary Attack Rate (SAR) Number of exposed persons developing the disease within the range of the incubation period, following exposure to primary case.

741. Out of 100 women who were offered ocp for contraception 10 women got pregnant when followed for 24 months. What is Pearl's index?

a) 10

b) 5

c) 4

d) 2

Correct Answer - B

Ans. B. 5

$$\text{Pearl-Index} = \frac{\text{Number of Pregnancies} * 12}{\text{Number of Women} * \text{Number of Months}} * 100$$

Pearl Index=10x12x100/100x24= 5

742. Which of the following do not cause hardness of water ?

a) Calcium carbonate

b) Calcium sulphate

c) Calcium bicarbonate

d) Magnesium bicarbonate

Correct Answer - A
Ans. A.Calcium carbonate
Temporary hardness is a type of water hardness caused by the presence of dissolved bicarbonate minerals (calcium bicarbonate and magnesium bicarbonate).
Permanent hardness is caused by dissolved calcium sulfate (which is not removed by boiling).

743. Which of the following is not an example of direct transmission in communicable diseases ?

a) Transplacental (vertical)

b) Soil

c) Respiratory

d) STD

Correct Answer - C

Ans. C. Respiratory

The modes of transmission of infectious diseases can be classified as:

- Direct Transmission. Direct contact; Droplet infection; Contact with soil; Inoculation into skin or mucosa; Transplacental (vertical)transmission.
- Indirect Transmission. Vehicle-borne; Water; food/milk; Vector-borne. Mechanical; Biological. Airborne.

744. Which of the following statement is false about MR vaccination campaign launched by WHO?

a) Children from 9 months to less than 15 vaccinated

b) Congenital rubella syndrome (CRS), responsible for irreversible birth defects

c) India has not yet launched this campaign

d) Will replace routine immunization for measles vaccine

Correct Answer - C

Answer: C. India has not yet launched this campaign

One of the world's largest vaccination campaign against measles, a major childhood killer disease, and congenital rubella syndrome (CRS), responsible for irreversible birth defects.

India, along with ten other WHO South East Asia Region member countries, have resolved to eliminate measles and control rubella/congenital rubella syndrome (CRS) by 2020

All children from 9 months to less than 15 years of age will be given a single shot of Measles-Rubella (MR) vaccination during the campaign

Following the campaign, MR vaccine will become a part of routine immunization and will replace measles vaccine, currently given at 9-12 months and 16-24 months of age of child.

For those children who have already received such vaccination, the campaign dose would provide additional boosting to them.

745. Under RNTCP, DOTS provider gets how much honorarium after completion of treatment ?

a) 150 Rs

b) 250 Rs

c) 500 Rs

d) 1000 Rs

Correct Answer - B
Ans. is 'b i.e., 250 Rs [Ref www.pbnrhm.org]
Honorarium to DOT provider for cure or completed TB patient treatment is 250 Rs per care.

746. Black death

a) Plague

b) Dengue

c) TB

d) Cholera

Correct Answer - A
Answer-A. Plague
White disease → AIDS
Poverty disease → Cholera
Hundred day cough: Pertussis (Whooping cough)
5 day fever: Trench fever
8" day disease: Tetanus
Black sickness: Kala azar
Black death: Plague

747. Where will you put chemical liquid biomedical waste

a) White

b) Yellow

c) Blue

d) Red

Correct Answer - B
Ans. B yellow
Chemical waste is categorized into the yellow category. the hazardous chemical and cytotoxic waste is a yellow category with a special sign of “CYTOTOXIC” waste.
Another liquid waste as body secretions is categorized into the yellow category of biomedical waste guidelines, 2016
Park’s PSM 24th ed. Page no. 831

748. Maximum work hours for a person including overtime under the factories act:

a) 48

b) 50

c) 60

d) 100

Correct Answer - C
Ans: C. 60 hours.
Factories act permits work for 48 hours per week with 2 hours of overtime every day.
making it approximately 60 hours of maximum work as per the factories act of India
Park's PSM 24th ed. Page no. 852

749. The vaccine to be given after disaster

a) vaccination against typhoid

b) vaccination against cholera

c) vaccination against typhoid and cholera

d) vaccination against tetanus

Correct Answer - D
Ans. D. vaccination against tetanus.
The major concern for anyone exposed to unsanitary conditions is that they should be up to date with the tetanus-containing vaccine because if they are injured (as is common in disaster settings) the injury is likely to be contaminated.
Routinely recommended vaccines are recommended for evacuees, just like they are for everyone else.
Cholera and typhoid vaccine do not have any evidence for mass vaccination due to the low level of exposure and prevention
Tetanus and HepB vaccine is required.

750. What is the MONICA project?

a) Multinational monitoring of trends and determinants in Cardiovascular Disease

b) Multinational of trends and determinants in cerebrovascular disease

c) Multinational monitoring of trends and determinants in diabetes

d) Multinational monitoring of trends and determinants in congenital heart disease

Correct Answer - A

Ans: A. Multinational monitoring of trends and determinants in Cardiovascular Disease

The WHO has completed a project known as MONICA " (multinational monitoring of trends and determinants in cardiovascular diseases)" to elucidate this issue.

Forty-one centers in 26 countries were participating in this project, which was planned to continue for a 10 year period ending in 1994.

Park's PSM 24th ed. Page no. 385

751. Extended sickness benefit for tuberculosis under the ESI Act is:

a) 91 days

b) 1-year

c) 2 years

d) 4 years

Correct Answer - C
Ans. C. 2 years
EXTENDED SICKNESS BENEFIT: In addition to 91 days of sickness benefit insured persons suffering from certain long-term diseases are entitled to Extended Sickness Benefit as shown below, for a maximum period of two years.
Extended Sickness Benefit with effect from 1.1.2000 is payable, in the case where the insured person has been in continuous employment for 2 years Tuberculosis
Park's PSM 24th ed. Page no. 854

752. A person reports 4 hours after having a clean wound without laceration. He had taken TT 10 years before. the next step in management is:

a) Full course Tetanus vaccine to be given

b) Full dose TT with TIG

c) Single-dose TT

d) No need for any vaccine

Correct Answer - C

Ans. C. Single-dose TT

A patient with wound less than 6 hours old if clean, non-penetrating and with negligible tissue damage if had a complete course of toxoid or a booster dose more than 10 years ago(category C) should be treated with Toxoid 1 dose.

Park's PSM 24th ed. Page no. 331

753. Recent Influenza Pandemic was due to:

a) H1N1

b) H5N1

c) H7N7

d) H3N2

Correct Answer - A
Ans. A. H1N1
H1N1 – swine flu – cause the major flu Pandemic (1918 and 2009)
H5N1 – avian influenza. may cause sporadic outbreaks or epidemics. It is associated with high mortality.

754. Mission Indradhanush is for:

a) Non-communicable diseases

b) Universal immunization

c) Family planning

d) Safe water and sanitation

Correct Answer - B
Ans. B. Universal immunization
The Ministry of Health & Family Welfare has launched " Mission Indra Dhanush", depicting seven colours of the rainbow in December 2014, to fully immunize more than 89 lakh children who are either unvaccinated or partially vaccinated; those that have not been covered during the rounds of routine immunization for various reasons.
They will be fully immunized against seven life-threatening vaccine-preventable diseases which include diphtheria, whooping cough, tetanus, polio, tuberculosis, measles, and hepatitis-B.
In addition, vaccination against Japanese Encephalitis and Haemophilus influenza type B will be provided in selected districts/states of the country.
Pregnant women will also be immunized against tetanus.
Ref. Park's PSM 24th ed. Page 462

755. A study had a normal distribution with the median value as 200 and standard deviation 20. 68 % will fall between

a) 160-240

b) 170-230

c) 180-220

d) 190-210

Correct Answer - C
Ans. C. 180-220
As the median value is 200 and the standard deviation is 20, the normal distribution is:
68% of the population will have values between – median +/- 1 SD = 220 +/- 20 = 180-220
95% of the population will have values between – median +/- 2 SD = 220 +/- 40 = 160-240
Note: in the MCQ, as the data shows a normal distribution, the median will be equal to mean and the mode.
Park's PSM Ed. 24th page no. 885

756. Which of the following is a technique/method based on behavioural sciences

a) Management by objectives

b) Network analysis

c) Systems analysis

d) Decision making

Correct Answer - A

Ans. A. Management by objectives

The methods based on behavioural sciences include

- organizational design
- personal management
- Management by objectives
- information systems
- communication

The Quantitative methods include:

- cost-benefit analysis
- cost-effective analysis
- input-output analysis
- network analysis as PERT and CPM
- Planning programming budgeting systems
- decision making

Ref: Park's 25ed, PAge no. 934

757. As per the sustainable development goals, The target for MMR is to achieve maternal deaths of

a) < 70 / Lac live births

b) < 100 / lac live births

c) < 7 / 1000 live births

d) < 10 / 1000 live births

Correct Answer - A
Ans: A. < 70 / Lac live births
By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births.
Park's PSM 24th ed. Page no. 28 Table: 4

758. The best method for routine monitoring of air pollution

a) Sulphur dioxide, smoke, and particulate matter

b) Sulphur dioxide, Hydrogen sulphide, carbon monoxide

c) Carbon dioxide, hydrogen sulphide, lead

d) Sulphur dioxide, Lead and particulate matter

Correct Answer - D

Ans. D Sulphur dioxide, Lead and particulate matter

Air quality index consists of:

- Particulate matter (less than 2.5 micrometers and 10 micrometer – PM2.5 and PM10)
- Nitrogen dioxide (NO2)
- Sulphur dioxide (SO2)
- Carbon monoxide (CO)
- Ozone (O3)
- Ammonia (NH3)
- Lead (Pb)

Reference: https://pib.gov.in/newsite/PrintRelease.aspx?relid=110654

759. The variation in data is compared with another data set by:

a) Variance

b) Coefficient of variation

c) The standard error of mean

d) Standard deviation

Correct Answer - B
Ans. B. Coefficient of variation
Variance: Is the square of SD which tells about the standard deviation
Coefficient of variation: It may help by comparing the variations in the data set
The standard error of the mean: It is to compare the means of the data sets which have a different sample size, central tendency, and standard deviations
Standard deviation: It is the deviation of values from the mean
Ref. Fundamentals of Biostatistics - 7th Edition (Pg 20, 21)

760. In which of the following methods of management is the benefit measured in natural units?

a) Program budgeting system

b) Network analysis

c) Cost-effective analysis

d) Cost-benefit analysis

Correct Answer - C
Ans. C. Cost-effective Analysis
In cost-effective analysis (CEA), benefits are measured in natural units of the outcomes of the programs (life-years gained, cases prevented, etc.) and the costs are measured in monetary units. The most comprehensive indicator of CEA is Quality-Adjusted Life Years (QALYs).
Park's PSM 24th ed. Page no. 908

761. The difference between the incidence in the exposed and non-exposed group is best given by:

a) Relative risk

b) Attributable risk

c) Population attributable risk

d) Odds ratio

Correct Answer - B

Ans. B Attributable Risk

Attributable Risk

Attributable Risk is the difference in incidence rates or proportions of disease or death between an exposed and non-exposed group.

$$\text{Attributable risk (AR)} = \frac{\text{Incidence of disease rate among } \textbf{exposed} - \text{Incidence of disease rate among } \textbf{non-exposed}}{\text{Incidence of disease rate among } \textbf{exposed}} \times 100$$

It is expressed in percentage and gives the extent to which the disease can be attributed to the exposure in a cohort study**.**

Reference: Park 25th Edition, page no:86

762. If one variable is given then you can find another variable by

a) Coefficient of variation

b) Coefficient of correlation

c) Coefficient of regression

d) Coefficient of determination

Correct Answer - C
Ans. C. Coefficient of regression
The coefficient of correlation tells about the strength of association but not about quantity. On the other hand, the coefficient of regression is used for quantification.
If we wish to know in an individual case the value of one variable, knowing the value of the other, we calculate what is known as the regression coefficient of one measurement to the other. It is customary to denote the independent variable by x and the dependent variable by y.

763. Prospective screening is done in case of?

a) Neonate for thyroid diseases

b) Immigrant screening

c) Pap smear for 45-year female

d) Diabetes mellitus for 40-year male

Correct Answer - B

Ans. B. Immigrant Screening

Screening of immigrants to a country is an example of prospective screening.

Prospective screening:

- People screened for others benefit
- The essential purpose is case detection
- Requested for screening for disease control; specific request from the authority

764. A researcher wanted to prove the relation between COPD and smoking. He collected patients records from government hospitals and records of cigarette sales from the finance and taxation department. This is an example of which study design:

a) Cross-sectional

b) Posological study

c) Ecological study

d) Operations research

Correct Answer - C

Ans. C. Ecological study design

This is an example of an ecological study.

An ecological study is a type of Observational study where information is collected on a group (or population) rather than on individual members and then analyzed.

Here the association between a summary measure of sale of cigarettes (risk factor) and a summary measure of the number of cases of COPD(outcome) is studied.

765. A study was done to assess malnutrition among young children. 100 children were selected each from rural and urban areas. Out of these, 30 among rural and 20 among urban were found to be malnourished. which of the following statistical test is used to compare the data sets?

a) Paired t-test

b) Chi-square

c) The standard error of mean

d) ANOVA

Correct Answer - B

Ans. B. Chi-square test

Chi-square (x 2) Test offers an alternate method of testing the significance of the difference between two proportions. It has the advantage that it can also be used when more than two groups are to be compared.

Park's PSM 24th ed. Page no. 889

766. The active disinfectant property of bleaching powder is due to:

a) Chlorine

b) Hypochloric acid

c) Hypochlorous acid

d) Chloramines

Correct Answer - C
Ans. C. Hypochlorous acid
Hypochlorous acid is the most effective form of chlorine for water disinfection.
The active component of bleaching powder, $CaOCl_2$, is hypochlorous acid.
The disinfecting action of chlorine is mainly due to hypochlorous acid, and to a small extent due to the hypochlorite ions.
Park's PSM 24th ed. Page no. 138

767. Mother does not transmit what antibody to the baby –

a) Polio

b) Diphtheria

c) Diphtheria

d) Tetanus

Correct Answer - A
Ans. A. Polio
When given during pregnancy, the Tdap vaccine boosts antibodies in the mother, which are transferred to her developing baby. Early third-trimester administration optimizes neonatal antibody levels.
Ref. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4168293/pdf/ci
1)

768. Voluntary admission can be done maximum up to how much time according to MHA 2017

a) 48 hrs

b) 7 Days

c) 30 Days

d) 90 Days

Correct Answer - D

Ans. D. 90 Days

If admission requires more than 30 days or readmission within 7 days (section 90), they should be examined by two psychiatrists and can be admitted for a maximum period of 90 days if they satisfy norms as per this section of the act and have to inform the board for permission, taking account of AD and consent should be reviewed fortnightly along with planning for community-based treatment.

http://www.amhonline.org/article.asp?issn=2589-9171;year=2018;volume=19;issue=1;spage=9;epage=14;aulast=Ne

769. Blood bags are disposed of in

a) Yellow bag

b) Black bag

c) Red bag

d) White bag

Correct Answer - C
Ans : C. Red bag
The black bag is used for collecting dry waste material which is not infectious.
Materials like paper, plastics, cardboard boxes, and other dry waste generated in the hospital office or in the wards are disposed of in this bag.
This is not biomedical waste.
The red bag is used for the disposal of plastics collected from operation theaters, ICUs and wards.
The yellow bag is used for highly infectious items like a pathological waste, human anatomical waste such as body parts, amputated parts/organs, tumors, placentas, aborted or dead fetuses, blood-soaked cotton bandages, animal tissues, organs, carcasses, etc.
Blue or White opaque bag is used for collecting the segregated metal sharps such as needles, blades, saws, scalpels, and glass pieces.
Ref Park 23'/e p. 793-794]

770. Absolute contraindication for IUD (Intra Uterine Contraceptive Device) are all except –

a) Pregnancy

b) Undiagnosed vaginal bleeding

c) Pelvic inflammatory disease

d) Uterine malformation

Correct Answer - D
Ans. is 'd i.e., Uterine malformation
Contraindications
ABSOLUTE:

- Suspected pregnancy
- Pelvic inflammatory disease
- Vaginal bleeding of undiagnosed etiology
- Cancer of the cervix, uterus or adnexa and other pelvic tumours
- Previous ectopic pregnancy

RELATIVE :

- Anaemia
- Menorrhagia
- History of PID(Pelvic Inflammatory Disease) since last pregnancy
- Purulent cervical discharge
- Distortions of the uterine cavity due to congenital malformations, fibroid
- Unmotivated person

771. In Vision 2020, the target for Secondary Sevice center is for how much population –

a) 10000

b) 50000

c) 1 lac

d) 5 lac

Correct Answer - D

Ans is 'd' i.e. 5 lac

Vision 2020: The Right to Sight, is a global initiative launched by WHO in 1999 in a broad coalition with a 'Task Force of International Non-Governmental Organisations (NGOs)' to combat the gigantic problem of blindness in the world.

The objective is to eliminate avoidable blindness by the year 2020 and to reduce the global burden of blindness. The government of India has adopted 'Vision 2020: Right to Sight' under the National Programme for Control of Blindness.

Based on the recommendations of WHO, there is a need to develop the infrastructure pyramid which includes

I. Primary level Vision Centres

- There is a need to develop 20000 vision centers,
- An Each with one Ophthalmic Assistant or equivalent (Community-based MLOP), Covering a population of 50000.

2. Service Centres.

- There is a need to develop 2000 service centers at the secondary level.
- Each with two ophthalmologists and 8 paramedics (Hospital-based

MLOP), and one eye care manager, Covering a population of 5 lacs.

3. Training Centres

- There is a need to develop 200 'Training Centres' for the training of Ophthalmologists, Covering a population of 50 lacs.

4. Centre of Excellence (COE)

- There is a need to develop 20 COE with well developed all sub-specialties of Ophthalmology, Covering a population of 5 crores.

772. Admission rate bias is?

a) Reporting bias

b) Response bias

c) Berkesonian bias

d) None

Correct Answer - C
Ans. is 'c' i.e., Berkesonian bias
Selection bias
Selection bias is distortion that results from the procedure used to select subjects and from factors that influence study participation.
Groups to be compared are differentially susceptible to the outcome even before the experimental maneuver is performed.
Selection bias may be of the following types.
1. Surveillance/detection bias

- A potential artifact in epidemiologic data caused by the use of a particular diagnostic technique or type of equipment.
- For example, cancer rates may vary in different regions or periods, not because of an actual difference in the incidence of disease but because of different diagnostic technologies.

If the diagnostic test is being used in one region is more sensitive than other regions, the cancer rates will be high in that region even without the existence of an actual difference.
2. Neyman survival bias (Incidence-Prevalence bias)

- This type of bias is due to missing fatal cases, mild cases or cases of shorter duration from the study.
- For example, in a study of breast cancer, we can choose two different types of cases : ?
- Incident cases → All breast cancer patients newly diagnosed during

a given time.

- Prevalent cases → All breast cancer patients who are alive during a given time frame.
- These can lead to different results because the probability of finding a case in a given time frame is related to mortality risk. Those patients who hay a mild form of the disease and survive for a relatively long time have a good chance of being around on the date of data collection. Those patients who die quickly are unlikely to be around on that date.

3. Referral bias or volunteer bias

- Volunteer or referral bias occurs because people who volunteer to participate in a study (or who are referred to it) are often different than non-volunteers/non-referral.
- This bias usually favours the treatment group, as volunteers tend to be more motivated and concerned about there health.

4. Response bias

- This occurs when those who respond to a survey differ in important ways from those who do not respond.
- This bias can work in either direction, i.e., if bias occurs, when those who do not respond to a survey differ in important ways from those who respond, it is called nonrespondent bias.

5. Berkesonian bias

- Berkesonian bias results from the greater probability of hospital admission for people with two or more diseases than for people with one disease. So, it is also known as admission rate bias.
- For example, If breast cancer is the exposure of interest (diseases are often treated as exposures in hospital-based case-control studies) and meningioma is the case disease then people with both breast cancer and meningioma could be hospitalized for either breast cancer or meningioma or both.
- However, people with only breast cancer or with the only meningioma could be hospitalized because of one of these diseases.
- Therefore, a greater proportion of people in the community with both breast cancer and meningioma would be admitted to the hospital than people with meningioma only.
- So, Berkesonian bias occurs when both exposure (e.g., breast

cancer in the above example) and disease (e.g., meningioma in above example) affect the selection