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DU MSc Zoology

Topic:- DU_J19_MSC_ZOO

1) Which of the following statements regarding Simple Tagged Sequences (STS) is FALSE?

[Question ID = 1291]

1. Two or more clones containing the same STS must overlap and the overlap must include the STS [Option ID = 5163]
2. Short region of DNA about 20–30 bases long whose exact sequence is found nowhere else in the genome [Option ID = 5162]
3. An STS marker can be used as a hybridization probe [Option ID = 5164]
4. The concept of sequence-tagged sites was developed by Olson *et al.* [Option ID = 5161]

Correct Answer :-

- The concept of sequence-tagged sites was developed by Olson *et al.* [Option ID = 5161]

2) Which of the following vitamins is essential for proper blood coagulation?

[Question ID = 1301]

1. Vit E [Option ID = 5203]
2. Vit A [Option ID = 5201]
3. Vit B [Option ID = 5202]
4. Vit K [Option ID = 5204]

Correct Answer :-

- Vit A [Option ID = 5201]

3) Which of the following electrophoresis techniques does use isoelectric focussing?

[Question ID = 1284]

1. PFGE [Option ID = 5135]
2. 2D-PAGE [Option ID = 5136]
3. AGE [Option ID = 5133]
4. SDS-PAGE [Option ID = 5134]

Correct Answer :-

- AGE [Option ID = 5133]

4) Which of the following is NOT a characteristic of a hormone ?

[Question ID = 1300]

1. Produced and secreted by exocrine glands [Option ID = 5198]
2. Found in low concentration in blood [Option ID = 5200]
3. Carried in the blood to target tissues [Option ID = 5197]
4. React with specific receptor molecules [Option ID = 5199]

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Correct Answer :-

- Carried in the blood to target tissues [Option ID = 5197]

5) Which of the following groups of proteins has the highest solubility?

[Question ID = 1225]

1. Structural proteins with transmembrane domain [Option ID = 4898]
2. Globular proteins [Option ID = 4897]
3. Proteins with more tryptophan [Option ID = 4899]
4. Prenylated proteins [Option ID = 4900]

Correct Answer :-

- Globular proteins [Option ID = 4897]

6) Which of the following is balancing organ?

[Question ID = 1249]

1. Eardrum [Option ID = 4996]
2. Vestibular region [Option ID = 4995]
3. Cochlea [Option ID = 4994]
4. Organ of corti [Option ID = 4993]

Correct Answer :-

- Organ of corti [Option ID = 4993]

7) Which of the following is not required while doing PCR?

[Question ID = 1293]

1. ddNTPs [Option ID = 5172]
2. Taq Polymerase [Option ID = 5170]
3. dNTPs [Option ID = 5171]
4. Buffer [Option ID = 5169]

Correct Answer :-

- Buffer [Option ID = 5169]

8) Which of the following is the most appropriate physiological reason of restriction endonuclease existence?

[Question ID = 1285]

1. To assist in molecular diagnosis by techniques like RFLP [Option ID = 5139]
2. To manipulate genes on DNA molecule [Option ID = 5137]
3. For gene cloning and construct restriction maps [Option ID = 5138]
4. To prevent entry of foreign genetic material [Option ID = 5140]

Correct Answer :-

- To manipulate genes on DNA molecule [Option ID = 5137]

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Which of the following cell types (or their products) is the LEAST effective against extracellular bacterial pathogens?

[Question ID = 1292]

1. Helper T cells [Option ID = 5167]
2. Macrophages [Option ID = 5168]
3. Cytotoxic T cells [Option ID = 5166]
4. B cells [Option ID = 5165]

Correct Answer :-

- B cells [Option ID = 5165]

10) Which of these principles is NOT central to the laws and guidelines governing the use of animals in research?

[Question ID = 1279]

1. Animal should be kept in its natural habitat [Option ID = 5115]
2. Use of that animal in experiment must be proven necessary [Option ID = 5116]
3. Proper anesthetization [Option ID = 5113]
4. Killing of animal as soon as experiment is over [Option ID = 5114]

Correct Answer :-

- Proper anesthetization [Option ID = 5113]

11) Which one of the following features does maximally contribute to the fidelity to DNA polymerases?

[Question ID = 1288]

1. Processivity [Option ID = 5150]
2. Polymerase activity 5' - 3' [Option ID = 5149]
3. Nucleotide supply [Option ID = 5151]
4. Proofreading activity 3' - 5' [Option ID = 5152]

Correct Answer :-

- Polymerase activity 5' - 3' [Option ID = 5149]

12) Deamination of bases is a common chemical event that produces spontaneous mutation. Which of the following bases will be formed by deamination of 5-methylcytocine?

[Question ID = 1299]

1. Cytosine [Option ID = 5195]
2. Thymine [Option ID = 5194]
3. Uracil [Option ID = 5193]
4. Guanine [Option ID = 5196]

Correct Answer :-

- Uracil [Option ID = 5193]

13) Insulin receptors are [Question ID = 1247]

1. G protein [Option ID = 4987]
2. Trimeric protein [Option ID = 4988]

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3. Intrinsic protein [Option ID = 4986]
4. Extrinsic protein [Option ID = 4985]

Correct Answer :-

- Extrinsic protein [Option ID = 4985]

14) Insulin promotes [Question ID = 1256]

1. Glycogenesis [Option ID = 5022]
2. Glycogenolysis [Option ID = 5023]
3. Gluconeogenesis [Option ID = 5024]
4. Glucosuria [Option ID = 5021]

Correct Answer :-

- Glucosuria [Option ID = 5021]

15) Rho factor which is responsible for termination of transcription DOES NOT have the following characteristic?

[Question ID = 1278]

1. Induces a confirmation change in polymerase [Option ID = 5112]
2. Is hexamer and ring shaped [Option ID = 5109]
3. Pulls RNA out of the polymerase [Option ID = 5111]
4. Is ATP-independent [Option ID = 5110]

Correct Answer :-

- Is hexamer and ring shaped [Option ID = 5109]

16) Male to male transmission is a key feature of which of the following patterns of inheritance? [Question ID = 1217]

1. X-linked dominant [Option ID = 4867]
2. X-linked recessive [Option ID = 4868]
3. Autosomal recessive [Option ID = 4866]
4. Autosomal dominant [Option ID = 4865]

Correct Answer :-

- Autosomal dominant [Option ID = 4865]

17) Contractile unit of muscle is the portion of myofibril between

[Question ID = 1316]

1. 'A' and 'H' band [Option ID = 5261]
2. Two adjacent Z-lines [Option ID = 5263]
3. Z-line and A-band [Option ID = 5262]
4. A-band and I-band [Option ID = 5264]

Correct Answer :-

- 'A' and 'H' band [Option ID = 5261]

18) Fatty acid synthesis and degradation are

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[Question ID = 1234]

1. Both are different pathways [Option ID = 4935]
2. Both produce malonyl CoA [Option ID = 4936]
3. Forward and reverse direction of the same pathway [Option ID = 4933]
4. Both produce long fatty acids [Option ID = 4934]

Correct Answer :-

- Forward and reverse direction of the same pathway [Option ID = 4933]

19) At isoelectric pH the charge on protein is

[Question ID = 1228]

1. Negative charge [Option ID = 4911]
2. No charge [Option ID = 4909]
3. Positive charge [Option ID = 4910]
4. Zero as net charge [Option ID = 4912]

Correct Answer :-

- No charge [Option ID = 4909]

20) What is the role of a transport protein in facilitated diffusion?

[Question ID = 1305]

1. They provide a site for ATP hydrolysis to facilitate movement [Option ID = 5220]
2. They provide the energy for diffusion of solute [Option ID = 5217]
3. They provide low-resistance channels for water molecules to cross [Option ID = 5219]
4. They provide a hydrophilic route to cross the membrane [Option ID = 5218]

Correct Answer :-

- They provide the energy for diffusion of solute [Option ID = 5217]

21) The part of nephron which is virtually impermeable to water is

[Question ID = 1307]

1. Distal convoluted tubule [Option ID = 5228]
2. Proximal convoluted tubule [Option ID = 5225]
3. Ascending limb of the loop of Henle [Option ID = 5227]
4. Descending limb of the loop of Henle [Option ID = 5226]

Correct Answer :-

- Proximal convoluted tubule [Option ID = 5225]

22) The hormone testosterone is produced by [Question ID = 1220]

1. Melanocyte [Option ID = 4879]
2. Leydig cells [Option ID = 4877]
3. Pancreas [Option ID = 4880]
4. Spermatocyte [Option ID = 4878]

Correct Answer :-

- Leydig cells [Option ID = 4877]

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23) Sickle-cell anaemia is caused by mutation in [Question ID = 1221]

1. Haemoglobin A [Option ID = 4881]
2. Haemoglobin F [Option ID = 4884]
3. Haemoglobin S [Option ID = 4883]
4. Haemoglobin B [Option ID = 4882]

Correct Answer :-

- Haemoglobin A [Option ID = 4881]

24) A differentiated cell normally remains arrested at what stage of the cell cycle?

[Question ID = 1304]

1. G1 [Option ID = 5214]
2. S [Option ID = 5216]
3. G0 [Option ID = 5213]
4. G2 [Option ID = 5215]

Correct Answer :-

- G0 [Option ID = 5213]

25) During synthesis of ATP in mitochondria, phosphate group is provided by

[Question ID = 1226]

1. Kinases which play major role of protein phosphorylation in cell [Option ID = 4903]
2. ATP, ADP and kinases in order of preference [Option ID = 4904]
3. Another ATP in which phosphate group is very reactive [Option ID = 4901]
4. Inorganic phosphate [Option ID = 4902]

Correct Answer :-

- Another ATP in which phosphate group is very reactive [Option ID = 4901]

26) The predominant antibody isotype released during primary immune response is [Question ID = 1261]

1. IgG [Option ID = 5042]
2. IgT [Option ID = 5043]
3. IgM [Option ID = 5041]
4. IgA [Option ID = 5044]

Correct Answer :-

- IgM [Option ID = 5041]

27) In a logistic growth curve, the exponential growth is a phase in which the population

[Question ID = 1277]

1. Growth begins to slow down [Option ID = 5107]
2. Growth stops [Option ID = 5108]
3. Grows quickly and few animals are dying [Option ID = 5106]
4. Reaches carrying capacity [Option ID = 5105]

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Correct Answer :-

- Reaches carrying capacity [Option ID = 5105]

28) In a diagnostic laboratory a technician prepared plastic assay plates for ELISA by coating a solution of the antigen, gp120 (a glycoprotein derived from the human immunodeficiency virus, the etiologic agent of AIDS), to the plastic surface. Several samples of serum from suspected infected individuals were tested for the presence of antibodies to gp120. When the assay was performed, all the test samples were positive, including control samples that were known not to contain anti-gp120 antibodies. What explanation best fits the facts?

[Question ID = 1297]

1. Labeled anti-immunoglobulin was not added [Option ID = 5187]
2. The technician put too much antigen on the plates [Option ID = 5186]
3. The technician forgot to "block" the plates with a control protein [Option ID = 5185]
4. The fluorescent labeling compound got dissociated from the labeled antibody [Option ID = 5188]

Correct Answer :-

- The technician forgot to "block" the plates with a control protein [Option ID = 5185]

29) In a randomly arranged DNA sequence, the probability of restriction digestion by BamHI with 6bp recognition sequence will be

[Question ID = 1286]

1. Approx. every 16bp [Option ID = 5143]
2. Approx. every 256bp [Option ID = 5142]
3. Approx. every 436bp [Option ID = 5144]
4. Approx. every 4096bp [Option ID = 5141]

Correct Answer :-

- Approx. every 4096bp [Option ID = 5141]

30) In a highly outbred populations, such as humans, point mutations are NOT considered to be SNPs only if -

[Question ID = 1290]

1. the least abundant allele has a frequency of less than 1% [Option ID = 5160]
2. the least abundant allele has a frequency of 1% or more [Option ID = 5159]
3. the least abundant allele has a frequency of 40% or more [Option ID = 5157]
4. the least abundant allele has a frequency of 10% or more [Option ID = 5158]

Correct Answer :-

- the least abundant allele has a frequency of 40% or more [Option ID = 5157]

31) Antiporters are cotransporters that transport [Question ID = 1270]

1. Cations and anions in the opposite direction. [Option ID = 5078]
2. Glucose against its concentration gradient. [Option ID = 5080]
3. Small molecules and gases in the same direction. [Option ID = 5077]
4. Na+ ions and glucose against the concentration gradient. [Option ID = 5079]

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• Small molecules and gases in the same direction. [Option ID = 5077]

32) How do you isolate mitochondria? [Question ID = 1245]

1. Size fractionation [Option ID = 4978]
2. Isothermal PCR [Option ID = 4980]
3. Affinity Chromatography [Option ID = 4979]
4. Differential density centrifugation [Option ID = 4977]

Correct Answer :-

• Differential density centrifugation [Option ID = 4977]

33) 'Pearl mother layer'(strong, resilient, and iridescent) in mollusk is [Question ID = 1258]

1. Prismatic layer [Option ID = 5029]
2. Nacre [Option ID = 5032]
3. Mantle [Option ID = 5031]
4. Periostracum [Option ID = 5030]

Correct Answer :-

• Prismatic layer [Option ID = 5029]

34) The process of finding relative location of genes on a chromosome is called [Question ID = 1265]

1. Genome mapping [Option ID = 5058]
2. Genome walking [Option ID = 5059]
3. Chromosome walking [Option ID = 5060]
4. Gene tracing [Option ID = 5057]

Correct Answer :-

• Gene tracing [Option ID = 5057]

35) The protection against smallpox afforded by prior infection with cowpox represents [Question ID = 1266]

1. Passive protection [Option ID = 5064]
2. Innate immunity [Option ID = 5063]
3. Antigenic cross-reactivity [Option ID = 5062]
4. Antigenic specificity [Option ID = 5061]

Correct Answer :-

• Antigenic specificity [Option ID = 5061]

36) If cardiolipin biosynthesis decreases in eukaryotic cells [Question ID = 1273]

1. The potential would remain at 140 mV [Option ID = 5091]
2. ADP would be imported into the matrix [Option ID = 5092]
3. ATP synthesis would be unaffected [Option ID = 5089]
4. The function of the ETC would be affected adversely [Option ID = 5090]

Correct Answer :-

• ATP synthesis would be unaffected [Option ID = 5089]

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Despite identical number of bases, which of the following will migrate faster in the agarose gel? [Question ID = 1283]

1. Nicked circular DNA [Option ID = 5130]
2. Single stranded DNA [Option ID = 5131]
3. Double stranded DNA [Option ID = 5132]
4. Supercoiled circular DNA [Option ID = 5129]

Correct Answer :-

- Supercoiled circular DNA [Option ID = 5129]

38) Lowry's method is used to measure [Question ID = 1244]

1. Protein [Option ID = 4975]
2. DNA [Option ID = 4973]
3. Lipids [Option ID = 4976]
4. RNA [Option ID = 4974]

Correct Answer :-

- DNA [Option ID = 4973]

39) The ability of the immune system to recognize self antigens versus non-self antigen is an example of [Question ID = 1237]

1. Tolerance [Option ID = 4946]
2. Humoral immunity [Option ID = 4948]
3. Specific immunity [Option ID = 4945]
4. Cell mediated immunity [Option ID = 4947]

Correct Answer :-

- Specific immunity [Option ID = 4945]

40) Disulfide bond can be broken by [Question ID = 1231]

1. Adding dithiothreitol [Option ID = 4923]
2. Adding hydrogen peroxide [Option ID = 4924]
3. Heating the protein at 50 degree C [Option ID = 4921]
4. Adding NaCl to the protein solution [Option ID = 4922]

Correct Answer :-

- Heating the protein at 50 degree C [Option ID = 4921]

41) Antigenic determinants of an antigen that are recognized by antibody are [Question ID = 1254]

1. Isotopes [Option ID = 5015]
2. Paratopes [Option ID = 5013]
3. Non-determinants [Option ID = 5016]
4. Epitopes [Option ID = 5014]

Correct Answer :-

- Paratopes [Option ID = 5013]

42) In which of the following animals, the heart does not have the left and right auricles?

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[Question ID = 1312]

1. Lizards and Snakes [Option ID = 5247]
2. Cartilaginous and bony fishes [Option ID = 5245]
3. Frogs and Toads [Option ID = 5246]
4. Crocodiles and alligators [Option ID = 5248]

Correct Answer :-

- Cartilaginous and bony fishes [Option ID = 5245]

43) MHC class I molecules are important for which of the following?

[Question ID = 1296]

1. Binding to CD8 molecules on T cells [Option ID = 5181]
2. Binding to CD4 molecules on T cells [Option ID = 5184]
3. Presenting viral protein to antigen-presenting cells such as macrophages [Option ID = 5183]
4. Presenting exogenous antigen (e.g., bacterial protein) to B cells [Option ID = 5182]

Correct Answer :-

- Binding to CD8 molecules on T cells [Option ID = 5181]

44) Epiboly occurs in the

[Question ID = 1282]

1. Macromeres only [Option ID = 5126]
2. Bottle cells [Option ID = 5128]
3. Micromeres only [Option ID = 5125]
4. Micromeres and macromeres both [Option ID = 5127]

Correct Answer :-

- Micromeres only [Option ID = 5125]

45) Cholesterol is a complex lipid and vital precursor of the following EXCEPT [Question ID = 1255]

1. bile salts [Option ID = 5019]
2. insulin [Option ID = 5020]
3. vitamin D [Option ID = 5018]
4. sex hormones [Option ID = 5017]

Correct Answer :-

- sex hormones [Option ID = 5017]

46) The ability of the immune system to recognize self-antigens versus nonself-antigen is an example of: [Question ID = 1308]

1. Specific immunity [Option ID = 5229]
2. Tolerance [Option ID = 5230]
3. Humoral immunity [Option ID = 5232]
4. Cell mediated immunity [Option ID = 5231]

Correct Answer :-

- Specific immunity [Option ID = 5229]

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47) The storage carbohydrate in animals [Question ID = 1222]

1. Glycogen [Option ID = 4887]
2. Glucose [Option ID = 4888]
3. Cellulose [Option ID = 4886]
4. Starch [Option ID = 4885]

Correct Answer :-

- Starch [Option ID = 4885]

48) Name the animal phylum which has NO representatives in freshwater habitats [Question ID = 1260]

1. Coelenterata [Option ID = 5037]
2. Mollusca [Option ID = 5040]
3. Porifera [Option ID = 5038]
4. Echinodermata [Option ID = 5039]

Correct Answer :-

- Coelenterata [Option ID = 5037]

49) Name the mosquito-borne disease caused by a viral pathogen [Question ID = 1253]

1. Leishmaniasis [Option ID = 5012]
2. Japanese encephalitis [Option ID = 5011]
3. Filariasis [Option ID = 5009]
4. Epidemic Typhus [Option ID = 5010]

Correct Answer :-

- Filariasis [Option ID = 5009]

50) In metabolic pathways, methyl group is donated by [Question ID = 1230]

1. Methane [Option ID = 4919]
2. Methylated fatty acid [Option ID = 4920]
3. S-adenosyl methionine [Option ID = 4917]
4. Methionine [Option ID = 4918]

Correct Answer :-

- S-adenosyl methionine [Option ID = 4917]

51) What is the function of GLUT4? [Question ID = 1248]

1. Glycogen transport [Option ID = 4990]
2. Insulin transport [Option ID = 4991]
3. Glucagon transport [Option ID = 4992]
4. Glucose transport [Option ID = 4989]

Correct Answer :-

- Glucose transport [Option ID = 4989]

52) Eustachian tube is present between [Question ID = 1257]

1. Inner ear and larynx [Option ID = 5028]
2. Middle ear and larynx [Option ID = 5025]
3. Outer ear and pharynx [Option ID = 5026]

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4. Middle ear and pharynx [Option ID = 5027]

Correct Answer :-

- Middle ear and larynx [Option ID = 5025]

53) Step wise method for solving problems in computer science is called [Question ID = 1264]

1. Sequential design [Option ID = 5054]
2. Procedure [Option ID = 5055]
3. Algorithm [Option ID = 5056]
4. Flowchart [Option ID = 5053]

Correct Answer :-

- Flowchart [Option ID = 5053]

54) A nonsense mutation involves [Question ID = 1224]

1. An AG splice acceptor site [Option ID = 4894]
2. The creation of a stop codon [Option ID = 4896]
3. The creation of a different amino acid [Option ID = 4895]
4. A regulatory sequence [Option ID = 4893]

Correct Answer :-

- A regulatory sequence [Option ID = 4893]

55) Schizocoelic phyla are

[Question ID = 1313]

1. Annelida, Arthropoda, and Mollusca [Option ID = 5251]
2. Arthropoda, Mollusca and Echinodermata [Option ID = 5252]
3. Platyhelminthes, Aschelminthes and Annelida [Option ID = 5250]
4. Protozoa, Porifera, Cnidarians, and Platyhelminthes [Option ID = 5249]

Correct Answer :-

- Protozoa, Porifera, Cnidarians, and Platyhelminthes [Option ID = 5249]

56) Identify the statement that is TRUE for Coenzyme Q [Question ID = 1272]

1. It is not a protein bound prosthetic group [Option ID = 5088]
2. Contains Fe bonded to inorganic S atoms and S atoms on cysteine residues of proteins [Option ID = 5086]
3. Accepts and releases electrons one at a time [Option ID = 5087]
4. It is a prosthetic groups of succinate-coenzyme Q reductase complex [Option ID = 5085]

Correct Answer :-

- It is a prosthetic groups of succinate-coenzyme Q reductase complex [Option ID = 5085]

57) An enzyme that can cleave and join DNA molecule [Question ID = 1241]

1. Gyrase [Option ID = 4961]
2. DNA polymerase [Option ID = 4963]
3. Primase [Option ID = 4964]
4. DNA ligase [Option ID = 4962]

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• Gyrase [Option ID = 4961]

58) Amino acids are transferred by tRNA for protein synthesis and each amino acid has

[Question ID = 1233]

1. tRNA not involved for each amino acid [Option ID = 4931]
2. Multiple tRNA for most amino acids [Option ID = 4932]
3. Same tRNA that carries all amino acids [Option ID = 4930]
4. Only one tRNA for each amino acid [Option ID = 4929]

Correct Answer :-

• Only one tRNA for each amino acid [Option ID = 4929]

59) During an equilibrium density gradient centrifugation when the density of liquid equals to the density of sedimenting particle, the particle will [Question ID = 1311]

1. Move randomly in the tube [Option ID = 5244]
2. Start moving towards top of the centrifuge tube [Option ID = 5243]
3. Continue moving towards the bottom of the centrifuge tube [Option ID = 5242]
4. Not move at all [Option ID = 5241]

Correct Answer :-

• Not move at all [Option ID = 5241]

60) During assembly of intermediate filaments the polarity is lost when [Question ID = 1268]

1. Dimers form tetramers [Option ID = 5070]
2. Dimers are formed [Option ID = 5072]
3. Tetramers form protofilaments [Option ID = 5069]
4. Protofibrils are assembled [Option ID = 5071]

Correct Answer :-

• Tetramers form protofilaments [Option ID = 5069]

61) Frog oocytes do not swell in hypotonic solutions. The most plausible explanation for this is the absence of

[Question ID = 1271]

1. Na^+ channels [Option ID = 5083]
2. Na^+ K^+ ATPase [Option ID = 5081]
3. Aquaporins [Option ID = 5082]
4. K^+ channels [Option ID = 5084]

Correct Answer :-

• Na^+ K^+ ATPase [Option ID = 5081]

62) Choose the INCORRECT statement

[Question ID = 1235]

1. An ecosystems's energy budget depends on primary productivity [Option ID = 4939]
2. Red data book compiles data on extinct species [Option ID = 4940]

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3. In pond ecosystems a narrow vertical zone of rapid temperature change is called the [Option ID = 4938]
4. Coral reefs constitute the most diverse and productive biomes on earth [Option ID = 4937]

Correct Answer :-

- Coral reefs constitute the most diverse and productive biomes on earth [Option ID = 4937]

63) In a Robertsonian translocation, fusion occurs at the [Question ID = 1218]

1. Ends of the long arms [Option ID = 4872]
2. Histones [Option ID = 4871]
3. Telomeres [Option ID = 4869]
4. Centromeres [Option ID = 4870]

Correct Answer :-

- Telomeres [Option ID = 4869]

64) Melting temperature (Tm) of double stranded DNA increases with

[Question ID = 1232]

1. Increased number of guanine/cytosine bases [Option ID = 4925]
2. Increase in number of adenine/thymine bases [Option ID = 4926]
3. Bases have no effect on Tm of DNA [Option ID = 4927]
4. Increased modified bases [Option ID = 4928]

Correct Answer :-

- Increased number of guanine/cytosine bases [Option ID = 4925]

65) Which of the following immune cells/molecules are the most effective in destroying intracellular pathogens? [Question ID = 1309]

1. T cytolytic cells [Option ID = 5236]
2. Antibodies [Option ID = 5235]
3. T helper cells [Option ID = 5233]
4. B cells [Option ID = 5234]

Correct Answer :-

- T helper cells [Option ID = 5233]

66) In eukaryotic cell cycle, metaphase to anaphase transition is regulated by the activity of:

[Question ID = 1298]

1. Cdc25 [Option ID = 5191]
2. Wee1 [Option ID = 5192]
3. Cdk1/cyclinB [Option ID = 5189]
4. APC/C [Option ID = 5190]

Correct Answer :-

- Cdk1/cyclinB [Option ID = 5189]

67) Most animals are tree dwellers in a [Question ID = 1259]

1. Coniferous forest [Option ID = 5036]

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2. Tropical rainforest [Option ID = 5033]
3. Thorn woodland [Option ID = 5035]
4. Temperate deciduous forest [Option ID = 5034]

Correct Answer :-

- Tropical rainforest [Option ID = 5033]

68) Match the following tumor cell origin with cancer type.

Tumor cell origin	Cancer type
1.Muscle cell	a.Carcinoma
2.Germ cell	b.Sarcoma
3.Epithelial cell	c.Leukemia
4.Blood cells	d.Teratocarcinoma

[Question ID = 1219]

1. 1-d, 2-a, 3-b, 4-c [Option ID = 4874]
2. 1-b, 2-c, 3-d, 4-a [Option ID = 4875]
3. 1-b, 2-d, 3-a, 4-c [Option ID = 4876]
4. 1-a, 2-c, 3-d, 4-b [Option ID = 4873]

Correct Answer :-

- 1-a, 2-c, 3-d, 4-b [Option ID = 4873]

69) Maximum diversity can be seen in [Question ID = 1236]

1. Tropical rain forest [Option ID = 4941]
2. Alpine forest [Option ID = 4944]
3. Temperate forest [Option ID = 4942]
4. Savanna [Option ID = 4943]

Correct Answer :-

- Tropical rain forest [Option ID = 4941]

70) What is the unit of molar extinction coefficient?

[Question ID = 1310]

1. cm^{-1} [Option ID = 5238]
2. M cm [Option ID = 5240]
3. M^{-1} [Option ID = 5237]
4. $M^{-1}cm^{-1}$ [Option ID = 5239]

Correct Answer :-

- M^{-1} [Option ID = 5237]

71) What is the function of *lacZ* gene of pUC18 vector among the following?

[Question ID = 1287]

1. Encodes for β-galactosidase enzyme [Option ID = 5146]
2. Encodes for β-galactoside transferase enzyme [Option ID = 5148]
3. Encodes for antibiotic resistance [Option ID = 5145]

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4. Encodes for β-lactamase enzyme [Option ID = 5147]

Correct Answer :-

- Encodes for antibiotic resistance [Option ID = 5145]

72) What is an ecological model of the relationships that form a network of complex interactions among organisms in a community from producers to decomposers?

[Question ID = 1276]

1. An ecosystem [Option ID = 5102]
2. Food web [Option ID = 5101]
3. Food chain [Option ID = 5103]
4. A population [Option ID = 5104]

Correct Answer :-

- Food web [Option ID = 5101]

73) Commensalism is an example of interaction between two organisms (for example A and B), where it is

[Question ID = 1302]

1. Neutral for both [Option ID = 5208]
2. Beneficial only to A and harmful to B [Option ID = 5206]
3. Beneficial for both A and B [Option ID = 5205]
4. Beneficial for A and has no effect (neutral) on B [Option ID = 5207]

Correct Answer :-

- Beneficial for both A and B [Option ID = 5205]

74) Fructose intolerance is due to ? [Question ID = 1227]

1. Because it is not absorbed and becomes toxic [Option ID = 4906]
2. Deficiency of Aldolase [Option ID = 4905]
3. It is more sweet than glucose [Option ID = 4907]
4. It is more soluble than glucose and absorbed more than glucose [Option ID = 4908]

Correct Answer :-

- Deficiency of Aldolase [Option ID = 4905]

75) Which of these sexually transmitted diseases is caused by a virus? [Question ID = 1246]

1. Syphilis [Option ID = 4982]
2. Genital herpes [Option ID = 4983]
3. Gonorrhea [Option ID = 4981]
4. Chlamydia [Option ID = 4984]

Correct Answer :-

- Gonorrhea [Option ID = 4981]

76) Which of the following genotypes causes Klinefelter syndrome? [Question ID = 1223]

1. XXY [Option ID = 4890]
2. XO [Option ID = 4889]

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3. XYY [Option ID = 4892]
4. XX [Option ID = 4891]

Correct Answer :-

- XO [Option ID = 4889]

77) Which of the following vector(s) was used extensively in Human Genome Project? [Question ID = 1238]

1. Cosmid [Option ID = 4950]
2. Both Cosmid and Yeast Artificial Chromosome (YAC) [Option ID = 4952]
3. Yeast Artificial Chromosome (YAC) [Option ID = 4951]
4. Plasmid vector [Option ID = 4949]

Correct Answer :-

- Plasmid vector [Option ID = 4949]

78) Which of the following organisms does NOT require sunlight to live? [Question ID = 1275]

1. Chemosynthetic bacteria [Option ID = 5097]
2. Algae [Option ID = 5098]
3. Trees [Option ID = 5099]
4. Photosynthetic bacteria [Option ID = 5100]

Correct Answer :-

- Chemosynthetic bacteria [Option ID = 5097]

79) Which of the following is not a channel of Mozilla? [Question ID = 1262]

1. Firefox Aurora [Option ID = 5048]
2. Firefox alpha [Option ID = 5046]
3. Firefox beta [Option ID = 5047]
4. Firefox [Option ID = 5045]

Correct Answer :-

- Firefox [Option ID = 5045]

80) Which of the following is the best method to determine bacteriophages concentration in a sample? [Question ID = 1242]

1. Copy assay number [Option ID = 4967]
2. Plaque assay [Option ID = 4966]
3. Light Microscopy [Option ID = 4968]
4. Spectrophotometer [Option ID = 4965]

Correct Answer :-

- Spectrophotometer [Option ID = 4965]

81) Amino-acids can be used for generation of energy, because [Question ID = 1229]

1. They can make the cytosol acidic and therefore used immediately to provide energy [Option ID = 4914]
2. They have both amino and carboxylic group [Option ID = 4913]
3. They can produce proteins that can store energy in peptide bonds and generates energy on degradation [Option ID = 4915]
4. They can get converted in oxaloacetate or pyruvate or alpha-ketoglutaric acid which can enter into TCA cycle [Option ID = 4916]

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Correct Answer :-

- They have both amino and carboxylic group [Option ID = 4913]

82) IFN gamma

[Question ID = 1294]

1. Induces Th2 responses [Option ID = 5174]
2. Is produced by all nucleated cells of the body [Option ID = 5173]
3. Was discovered because of its effect on tumors [Option ID = 5176]
4. Can activate macrophages [Option ID = 5175]

Correct Answer :-

- Is produced by all nucleated cells of the body [Option ID = 5173]

83) Bacteria with a tuft of flagella found at one of the cell pole is called as [Question ID = 1239]

1. Monotrichous [Option ID = 4953]
2. Petritrichous [Option ID = 4955]
3. Polotrichous [Option ID = 4956]
4. Lophotrichous [Option ID = 4954]

Correct Answer :-

- Monotrichous [Option ID = 4953]

84) Protected fermentation uses [Question ID = 1240]

1. Unsterilized media [Option ID = 4960]
2. Sterilized media [Option ID = 4957]
3. Pasteurized media with low pH [Option ID = 4959]
4. Pasteurized media [Option ID = 4958]

Correct Answer :-

- Sterilized media [Option ID = 4957]

85) Which of the following is the first biological database? [Question ID = 1263]

1. Genbank [Option ID = 5049]
2. OMIM [Option ID = 5052]
3. Atlas of Protein sequence and structure [Option ID = 5051]
4. DDBJ [Option ID = 5050]

Correct Answer :-

- Genbank [Option ID = 5049]

86) A 'muscle cell' actually refers to a muscle [Question ID = 1252]

1. Bundle [Option ID = 5005]
2. Filament [Option ID = 5008]
3. Fibril [Option ID = 5007]
4. Fiber [Option ID = 5006]

Correct Answer :-

- Bundle [Option ID = 5005]

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87) The isoform/s of actin present in all cells is/are

[Question ID = 1267]

1. alpha-actin [Option ID = 5065]
2. beta -actin [Option ID = 5067]
3. beta- and gamma-actin [Option ID = 5068]
4. alpha and beta-actin [Option ID = 5066]

Correct Answer :-

- alpha-actin [Option ID = 5065]

88) The repair mechanism used for unreplicated chromosome with a break and no sister chromosome to serve as template

[Question ID = 1289]

1. Homologous recombination [Option ID = 5156]
2. Non homologous end joining [Option ID = 5155]
3. Translesion DNA synthesis [Option ID = 5154]
4. Recombination based double strand break repair pathway [Option ID = 5153]

Correct Answer :-

- Recombination based double strand break repair pathway [Option ID = 5153]

89) The larger poison claws of the centipede are component of

[Question ID = 1251]

1. Mandibles [Option ID = 5001]
2. Telson [Option ID = 5004]
3. Maxillipeds [Option ID = 5002]
4. Maxillae [Option ID = 5003]

Correct Answer :-

- Mandibles [Option ID = 5001]

90) The mid blastula transition is a point in development of amphibians when

[Question ID = 1280]

1. Cell determination becomes fixed [Option ID = 5118]
2. Cell division in embryo ends [Option ID = 5120]
3. Transcription of zygotic genes begin [Option ID = 5119]
4. Translation of maternal mRNA is initiated [Option ID = 5117]

Correct Answer :-

- Translation of maternal mRNA is initiated [Option ID = 5117]

91) The ability of cells to respond to a specific inductive signal is called

[Question ID = 1281]

1. Induction [Option ID = 5121]
2. Instructive interaction [Option ID = 5124]

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3. Competence [Option ID = 5122]
4. Juxtacrine signalling [Option ID = 5123]

Correct Answer :-

- Induction [Option ID = 5121]

92) The endogenous pathway of antigen presentation involves

[Question ID = 1295]

1. Mostly peptides derived from extracellular pathogens [Option ID = 5177]
2. Presentation of antigen to Th1 cells [Option ID = 5180]
3. Presentation of antigen on MHC class II molecules [Option ID = 5178]
4. Presentation of antigen to cytolytic T cells [Option ID = 5179]

Correct Answer :-

- Mostly peptides derived from extracellular pathogens [Option ID = 5177]

93) The dynamic functions in the living systems are brought about by interplay of weak chemical interactions. Which of the following weak chemical interactions is the most important in determining the three dimensional structure of macromolecules?

[Question ID = 1303]

1. van der waal's interaction [Option ID = 5211]
2. Electrostatic interactions [Option ID = 5210]
3. Hydrophobic interactions [Option ID = 5212]
4. Hydrogen bonds [Option ID = 5209]

Correct Answer :-

- Hydrogen bonds [Option ID = 5209]

94) The term tunicate makes reference to the urochordate test, or tunic, which is composed of

[Question ID = 1314]

1. cellulose [Option ID = 5254]
2. calcium carbonate [Option ID = 5256]
3. silicon dioxide [Option ID = 5253]
4. chitin [Option ID = 5255]

Correct Answer :-

- silicon dioxide [Option ID = 5253]

95) The algae at the beginning of the food chain in the following flowchart Algae -> Zooplankton -> Small fishes -> Squid -> Shark, is

[Question ID = 1274]

1. Decomposers [Option ID = 5094]
2. Producers [Option ID = 5095]
3. Consumers [Option ID = 5093]
4. Heterotrophs [Option ID = 5096]

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Correct Answer :-

- Consumers [Option ID = 5093]

96) Unidirectional propagation of action potential is ensured by [Question ID = 1269]

1. The channel inactivation segment [Option ID = 5075]
2. Hyperpolarization of the membrane [Option ID = 5076]
3. Voltage-gated Na+ channels [Option ID = 5073]
4. Shaker K+ channels [Option ID = 5074]

Correct Answer :-

- Voltage-gated Na+ channels [Option ID = 5073]

97) Buffering capacity of the hemoglobin is due to the presence of which of the following amino acids?

[Question ID = 1306]

1. Histidine [Option ID = 5224]
2. Lysine [Option ID = 5223]
3. Glutamate [Option ID = 5222]
4. Cysteine [Option ID = 5221]

Correct Answer :-

- Cysteine [Option ID = 5221]

98) True and complete metamorphosis is observed in

[Question ID = 1250]

1. Mosquitoes [Option ID = 5000]
2. Cockroach [Option ID = 4999]
3. Grasshopper [Option ID = 4998]
4. Silverfish [Option ID = 4997]

Correct Answer :-

- Silverfish [Option ID = 4997]

99) Cry I endotoxins obtained from *Bacillus thuringiensis* are effective against

[Question ID = 1243]

1. Mosquitoes [Option ID = 4972]
2. Boll worm [Option ID = 4971]
3. Nematodes [Option ID = 4969]
4. Flies [Option ID = 4970]

Correct Answer :-

- Nematodes [Option ID = 4969]

100) Mark the INCORRECTLY matched pair?

[Question ID = 1315]

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1. Book gills – Insects [Option ID = 5260]
2. Closed circulation – Pheretima [Option ID = 5259]
3. Parapodia – Nereis [Option ID = 5257]
4. Muscular pharynx – Ascaria [Option ID = 5258]

Correct Answer :-

- Parapodia – Nereis [Option ID = 5257]

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