

03/23

The West Bengal University of Health Sciences
MBBS 2nd Professional Examination (New Regulation) March - April 2023

Subject : Microbiology

Full Marks : 100

Paper : II

Time : 3 hours

Attempt all questions. The figures in the margin indicate full marks.

1. a) A 10 year old boy was brought to the emergency of your hospital in a state of restlessness. On examination it was noted that he had repetitive facial movements and repulsion to drink water. The mother of the boy gave a history of the boy been bitten by a dog on the left ankle about 6 months back. 1+1+4+4+5
- i) What is the clinical diagnosis?
- ii) Name the causative agent causing such condition.
- iii) Describe the pathogenesis of the disease.
- iv) Outline the laboratory diagnosis of such a case.
- v) Describe the post exposure prophylaxis of this clinical condition.
- b) A multi transfused thalassemic child presents with icterus, nausea, anorexia, fever and vomiting. Mention most likely clinical diagnosis and the possible etiological agents. How would you approach the current laboratory diagnosis of this patient following national guidelines. 1+4+10
2. a) What is the etiological agent of Primary Amoebic Encephalitis (PAM). What is the mode of infection? How PAM is diagnosed in lab? 2+2+6
- b) Which type and subtypes of Influenza viruses are in circulation nowadays? How influenza is diagnosed in the lab? Enumerate the vaccines available to prevent influenza. 3+4+3
- c) What are the virulence factors of N. gonorrhoeae? How Gonorrhoea in male is diagnosed in lab? 4+6
3. Write short notes on following: 2 x 5
- i) Oncogenic DNA viruses.
- ii) Congenital Toxoplasmosis.
4. Explain the following statements: 5 x 4
- i) Gas gangrene is polymicrobial in origin.
- ii) Rapid diagnosis may help in the laboratory diagnoses of fungal meningitis.
- iii) Culture is always essential for species identification of dermatophytes.
- iv) Gram staining of suspected wound swab may not confirm the laboratory diagnosis of tetanus.
- v) Atypical mycobacteria differs from typical mycobacteria in many ways.
5. Choose the correct option for each of the following:
- a) Selective media for Staphylococcus aureus is:
- i) Tetrathionate broth
- ii) Cornmeal agar
- iii) Mannitol salt agar
- iv) Skirrows media

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- b) Swimming pool granuloma is caused by:
- ~~i) Mycobacterium szulgai~~
 - ☒ ii) Mycobacterium marinum
 - iii) Mycobacterium xenopi
 - iv) Mycobacterium fortuitum
- c) Melioidosis is caused by:
- ☒ i) Burkholderia pseudomalli
 - ii) Burkholderia mallei
 - iii) Streptotrophomonas maltophilia
 - iv) Elizabethkingia meningosepticum
- d) Prodigiosin pigment is produced by:
- i) Pseudomonas aeruginosa
 - ii) Staphylococcus aureus
 - iii) Mycobacterium kansasii
 - ☒ iv) Serratia marcescens
- e) All are the features of Pneumocystis jirovecii pneumonia except:
- ☒ i) Can be grown in BHI agar
 - ii) GMS stain is used to demonstrate cyst
 - iii) 1,3 β -D-glucan can be detected in serum
 - iv) It is a type of plasma cell pneumonia
- f) Which of the following paramyxoviruses has a surface glycoprotein lacking hemagglutinin activity?
- i) Mumps
 - ii) Measles
 - iii) Respiratory syncytial virus
 - iv) Parainfluenza virus type 1
- g) Germ tube test is diagnostic for:
- i) Candida glabrata
 - ☒ ii) Candida albicans
 - iii) Cryptococcus
 - iv) Coccidioides immitis
- h) Humans acquire cysticercus cellulosae infection by all, except:
- i) Ingestion of contaminated vegetables
 - ii) Autoinfection
 - iii) Reverse peristalsis
 - ☒ iv) Ingestion of contaminated pig's meat
- i) All are true of biological agents used as bio weapons except:
- i) Potential for person to person spread
 - ii) Should produce high morbidity and mortality in the community
 - * iii) Has rapid diagnostic facilities
 - iv) Should be highly infectious by aerosol
- j) All of the followings are vector borne diseases except:
- i) African sleeping sickness
 - ii) Dengue fever
 - ☒ iii) Enteric fever
 - ☒ iv) Zika viral disease