

**The West Bengal University of Health Sciences**  
**MBBS 2nd Professional Examination (New Regulation) July-August 2024**

Full Marks : 100  
Time : 3 hours

Subject: Microbiology  
Paper: I

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

1. a) An indoor burn patient complains with bluish green discharge from wound, 14 days after admission in hospital. 1+3+1+5+5
  - i. What type of infection it is?
  - ii. Define this type of infection and explain.
  - iii. What is the most probable organism in this case?
  - iv. How will you proceed for lab diagnosis?
  - v. Describe the precautions to be taken to prevent such type of infection.
- b) A male patient from Bihar attended OPD with fever, anemia and hugely enlarged spleen for last 6 months. He is having blackish discoloration of skin. 2+2+6+5
  - i. What is the most probable diagnosis and which one is the vector?
  - ii. Which protozoa is responsible for this?
  - iii. Describe the immunopathogenesis of the disease.
  - iv. How will you diagnose the case in the laboratory?
2. a) Describe the immune response unfolds/evolves when a microbial pathogen enters into the body of an immunocompetent host. 10  
b) Define biomedical waste (BMW). Give an account on the categorization of them for disposal. Discuss the process of disposal of BMW, generated after collection. 2+3+5  
c) Classify bacteria on the basis of flagella with examples. Describe the structure of a flagellum. Discuss the common methods used to demonstrate bacterial flagella. 4+3+3
3. Write short notes on following: 2 x 5
  - a) Management of needle stick injury of a phlebotomist.
  - b) How to communicate a patient diagnosed with chronic Hepatitis C infection regarding probable long-term complications? 5 x 4
4. Explain the following statements:
  - a) Sterilization of MacConkey media needs some modification.
  - b) Capsule contributes to bacterial virulence.
  - c) Enterococci can be vancomycin resistant.
  - d) Superantigen can cause more T cell activation than any antigen.
  - e) Free streaming is important step in autoclaving.

5. Choose the correct option for each of the following:

- a) The smallest virus in size:  
i) Picorna virus  
ii) Parvo virus  
iii) Adeno virus  
iv) Hepatitis D virus
- b) Generation time for *Treponema pallidum* is:  
i) 20 min  
ii) 30 min  
iii) 33 hrs  
iv) 7 days
- c) The percentage of Gluteraldehyde for endoscopic decontamination is:  
i) 1%  
ii) 2%  
iii) 1.5%  
iv) 4%
- d) Rota virus has got genome with:  
i) 5 segment  
ii) 7 segment  
iii) 11 segment  
iv) 9 segment
- e) All are vector borne diseases except:  
i) African sleeping sickness  
ii) Dengue fever  
iii) Enteric fever  
iv) Zika viral disease
- f) Which of the following is cell wall deficient bacterium?  
i) Staphylococcus  
ii) Streptococcus  
iii) Mycoplasma  
iv) Chlamydia
- g) Definitive host of *Echinococcus granulosus*:  
i) Dog  
ii) Sheep  
iii) Cat  
iv) Man
- h) L form of spheroplasts are sensitive to:  
i) Bacitracin  
ii) Cefoperazone  
iii) Vancomycin  
iv) Tetracycline
- i) Essentially the pathogenesis of Rheumatic fever involves  
i) Type II Hypersensitivity  
ii) Serum sickness  
iii) Arthus phenomenon  
iv) Exotoxin mediated damage to endocardium
- j) In ELISA technique, the antibodies are labeled by:  
i) Acridine orange  
ii) Neutral Red  
iii) Alkaline phosphatase  
iv) Bromothymol blue