

**SS/MBBS-II/MIC-I/12-24****2024****(December)****MICROBIOLOGY****Paper-I****Full Marks: 90****Time: 2 hours 50 minutes****The figures in the margin indicate full marks for the questions****Answer all questions**

Illustrate your answers with suitable diagrams and flowcharts wherever necessary.

Write the question number correctly.

Answer the questions in order.

1. Define immunity. Write the differences between innate and acquired immunity. Describe in detail about the properties and mediators of innate immunity. (2+3+5=10)

2. Define Healthcare Associated Infection (HAI). Describe the different components of standard precautions for prevention and control of HAI. (2+8=10)

3. A young adult female was admitted to hospital with fever of remittent type with gradual rise in step-ladder fashion. On physical examination, she was toxic, tongue was coated, mild splenomegaly, and relative bradycardia was present. (1+2+3+6+3=15)

(a) What is your provisional clinical diagnosis?

(b) Name the etiological agents.

(c) Describe the pathogenesis of this condition.

- (d) How will you establish the laboratory diagnosis?
- (e) What prophylactic measures are available to control this disease?

**4. Write short notes on the following: (5×5=25)**

- (a) Dimorphic fungi
- (b) Contribution of Robert Koch in microbiology
- (c) Transport media—its necessity and importance
- (d) Significance of HIV screening
- (e) Structure and function of flagella

5. Enumerate the hepatitis viruses. How will you proceed to diagnose hepatitis B virus infection in the laboratory? (2+8=10)

6. A 17-year-old boy presented with bloody diarrhoea with mucus and pus cells, colicky abdominal pain, fever, and prostration. The wet mount examination of the stool sample showed trophozoites of 5–20 µm, actively motile with finger-like pseudopodia. (2+3+7+3=15)

- (a) What is the probable clinical diagnosis and etiological agent?
- (b) Describe the pathogenesis of this condition.
- (c) Describe the laboratory diagnosis of the above condition.
- (d) How will you treat this clinical condition?

7. Write a short note on the role of informed consent of the patient before any investigation. 5

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