

The West Bengal University of Health Sciences
MBBS 2nd Professional Examination, (New Regulation) May 2022

Subject : Microbiology
Paper : I

Full Marks : 100
Time : 3 hours

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

1. a) A 25 year old male patient was brought to the emergency of a hospital with a history of altered sensorium. Patient party gave history of high fever for last 3 days with headache and vomiting. On examination mild hepatosplenomegaly was found. 1+1+3+6+4
 - i) What is your clinical diagnosis ?
 - ii) Name the parasite causing this condition
 - iii) Briefly write about the pathogenesis of this condition
 - iv) How can you establish the etiological diagnosis in the laboratory?
 - v) What are the complications that can occur due to the parasite?
 - b) A 40 year old woman comes to the OPD with unexplained fever, severe weight loss of more than 10% and chronic diarrhea of more than 1 month. Her husband, a 48 year old truck driver, gave history of repeated unprotected sexual exposure. 1+1+5+5+3
 - i) What is your probable clinical diagnosis ?
 - ii) Name the causative agent.
 - iii) Write down the laboratory diagnosis for the clinical condition.
 - iv) What are the opportunistic infections, that might develop in a patient with the progress of the disease.
 - v) What is window period in respect to this clinical condition?
2. a) Name some important HAI (Hospital Acquired Infection). How they can be prevented ? 5+5
 - b) Define hypersensitivity. Discuss type IV hypersensitivity. Write down the role of complement in hypersensitivity. 2+4+4
 - c) What is flagella ? How will you demonstrate it ? 5+5
3. Write short notes on following: 2 x 5
 - a) Koch's postulate.
 - b) Discuss on the respect to be shown to a clinically suspected HIV/AIDS patient for the collection of sample.
4. Explain the following statements: 5 x 4
 - a) Anaphylaxis is an immunological mediated process.
 - b) Significance of blood culture in enteric fever.
 - c) Cell wall of gram positive bacteria differs a lot from that of gram negative bacteria.
 - d) Macconkey agar is a selective and indicator media.
 - e) Halophilic vibrios needs high concentration of salt for their growth.

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

10 x 1

1. In ELISA technique, the antibodies are labeled by -
 - i) Acridine orange
 - ii) Alkaline phosphatase
 - iii) Neutral red
 - iv) Bromothymol blue
2. Bacteria having single flagellum attached to each end known as
 - i) Lophotrichous
 - ii) Monotrichous
 - iii) Peritrichous
 - iv) Amphitrichous
3. Clear-zones formation around antibiotic disc is due to
 - i) Growth of the bacterium surrounding of the disc
 - ii) Lysis of bacterial cells surrounding the disc
 - iii) The degradation of antibiotic present in paper disc
 - iv) Antibiotic disc has a glowing metallic shine
4. Dengue virus is transmitted from man to man by the
 - i) Sand fly
 - ii) Ticks
 - iii) Aedes aegypti
 - iv) Culex vishnui
5. Rapid bacterial growth phase is known as
 - i) Log phase
 - ii) Lag phase
 - iii) Lack phase
 - iv) Quick phase
6. Which of the following is not a policy behind the solid waste management
 - i) Control of waste generation
 - ii) Disposal
 - iii) Stop waste generation
 - iv) Storage and collection
7. All are molecular techniques in microbiology except-
 - i) CBNAAT
 - ii) Ligase chain reaction (LCR)
 - iii) Multiplex PCR
 - iv) Vitek – 2 system
8. Which one of the following cytokines can induce fever ?
 - i) IL-2
 - ii) IL-1
 - iii) IL-4
 - iv) IL-05
9. All of these are antigen presenting cells except -
 - i) T cells
 - ii) B-cells
 - iii) Dendritic cells
 - iv) Macrophages
10. In widal test rise of TO and AH indicates infection is with
 - i) Salmonella Typhi
 - ii) Salmonella Paratyphi A
 - iii) Salmonella Paratyphi B
 - iv) Salmonella Paratyphi C