

# Question Paper

Exam Date & Time: 01-Sep-2022 (10:00 AM -12:30 PM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

MELAKA MANIPAL MEDICAL COLLEGE (MANIPAL CAMPUS)

MBBS PHASE I STAGE II DEGREE EXAMINATION –AUGUST/SEPTEMBER 2022

Thursday, September 01, 2022

Microbiology [M2MIC]

Marks : 60

Duration : 120 mins

### MICROBIOLOGY – PART – II (ESSAY)

Answer all the questions

Draw diagrams wherever appropriate

- A 40-year-old patient attended hospital with complaints of productive cough with blood tinged sputum, low grade fever and night sweats for the past three weeks. He had severe weight loss. Chest radiograph showed opacities in the right lung. Sputum microscopy revealed the presence of numerous acid-fast bacilli along with pus cells. Further laboratory investigations was done to confirm the etiological agent and he was also started on antibiotics.

  - Name the causative organism.
  - Discuss the pathogenesis of this condition.
  - Explain the laboratory diagnosis in this case

(1+4+3 = 8 marks)
- 22-year-old drug addict was admitted to the hospital with complaints of fever, nausea, vomiting, pain in the right side of the abdomen, and yellowish discoloration of his skin and eyes. He complained of passing high coloured urine. On examination, his liver was palpable. An ELISA test performed for the detection of a DNA viral surface antigen came out to be positive. His liver function tests showed elevated serum bilirubin and liver enzymes. He was put on supportive therapy and viral markers were checked every month for seroconversion.

  - List the seromarkers that help to confirm the stage of infection in this patient during the hospital visit.
  - Plot a graph depicting the seromarkers and explain their diagnostic significance.
  - State the immunoprophylaxis , which he would have taken to prevent the disease.

(1+5+1 = 7 marks)
- With the help of a neat labeled diagram, compare the gram positive and gram negative bacterial cell wall.

(5 marks)
- Explain the mechanism of type 1 hypersensitivity reaction and the mediators involved.

(5 marks)
- Classify sterilization methods. Explain the working principle of an autoclave.

(2+3 = 5 marks)
- Explain the laboratory diagnosis of cryptococcal meningitis.

(5 marks)

7. Describe the antigenic variations observed in influenza viruses. State its significance. (5 marks)
8. Explain the laboratory diagnosis of diphtheria (5 marks)
9. Explain the pathogenesis of dengue hemorrhagic fever shock syndrome. (5 marks)
10. Discuss the laboratory diagnosis of malaria. (5 marks)
11. Discuss the routes of transmission of HIV infection to humans and name the confirmatory laboratory test done for its diagnosis. (4+1 = 5 marks)