



All India Institute of Medical Sciences, Kalyani
Second Professional MBBS Examination, February 2024

Time: 3 Hrs.

Microbiology (Paper-I)

Marks: 100

- Answer all questions.
- Answer the questions in the same serial order strictly.
- Illustrate your answers with well labelled diagram wherever necessary.
- Answer each section in a separate answer book.

SECTION - A (50 MARKS)

Long answer question:

[1+1+3+3+2=10]

1. A five- year old boy has presented to the OPD of a rural health center with complaints of frequent passage of loose stool mixed with blood and mucus for the last 3 days. He also complains of fever, abdominal pain and tenesmus.
 - a. What is this clinical syndrome called?
 - b. Enumerate two bacteria that can be associated with this condition.
 - c. Describe the pathogenesis of this clinical presentation.
 - d. How will you collect an appropriate clinical sample from this child and transport it to a distant laboratory?
 - e. Enumerate the various types of culture media used for the laboratory diagnosis of this condition, along with examples of each type.

Write Short notes on:

[8×5=40]

2. IgM antibody
3. Pathogenesis of Diphtheria
4. VDRL Test
5. Hot air Oven
6. Type-3 Hypersensitivity
7. Bacterial growth curve
8. Differences between Gram-positive cell wall and Gram-negative cell wall
9. Polymerase chain reaction

SECTION - B (50 MARKS)

Long answer question:

[2+4+4=10]

1. A mother brought a 6-year-old child to the paediatric OPD with complaint of fever, cough and weight loss for 5 days. On clinical examination a thick greyish membrane was observed covering the throat and tonsils with cervical lymphadenopathy.
 - a. What is the probable bacterial causative agent and the disease?
 - b. Describe the pathogenesis of the above disease.
 - c. How do you perform the laboratory diagnosis of the disease?

Write Short notes on:

[8×5=40]

2. Significant bacteruria
3. Antibody-dependent cell-mediated cytotoxicity (ADCC)
4. Methicillin Resistant *Staphylococcus aureus*
5. Clinical presentations of Leptospirosis
6. Route of transmission and Clinical presentations in Brucellosis
7. MDR-TB
8. Typhoid vaccine
9. Specific tests for syphilis