



All India Institute of Medical Sciences, Kalyani
Second Professional MBBS Examination (Batch-2020-21)

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 28-year-old B-negative blood group mother gave birth to a B positive blood group son, which was her second child. The baby was pale on birth with yellowish discolouration of skin and sclera developing in 48 hours. On examination, there was jaundice, pallor, generalized oedema and hepatosplenomegaly.
 - a. What is this condition?
 - b. Which type of hypersensitivity reaction has occurred?
 - c. Describe the mechanism of this hypersensitivity reaction.
 - d. What test can be done on mothers' blood? Describe the principle of the test
 - e. How could this disease be prevented?

Write Short notes on:

[8X5=40]

2. Sterilisation of stainless steel instruments used for surgery
3. Egg-containing bacterial culture media
4. Enumerate and discuss the virulence factors of bacteria
5. Hand hygiene
6. Principle and applications of Real-time PCR
7. Functions of the antibody molecule
8. Antigen-presenting cells
9. Innate immunity

SECTION - B (50 MARKS)

Long answer question:

[1+2+5+1+1=10]

1. A 72-year-old diabetic, hypertensive male presented to the emergency with a history of fever for the last 3 days along with headache, photophobia, vomiting and altered sensorium. On examination, he had neck rigidity.
 - a. What is the provisional diagnosis?
 - b. Enumerate the most probable bacterial agents.
 - c. Write about the laboratory diagnosis of this patient
 - d. Mention the treatment of this patient
 - e. Mention the complications of this condition

Write Short notes on:

[8X5=40]

2. Virulence factors, pathogenesis and prevention of Diphtheria
 3. Non-suppurative diseases caused by Group A Streptococcus
 4. A mite-borne bacterial acute febrile illness common in India
 5. Extrapulmonary manifestations and complications of tuberculosis
 6. Laboratory Diagnosis of Syphilis in different stages of the illness
 7. Enumerate and discuss the various bacterial causes of gastroenteritis
 8. Melioidosis
 9. Clinical features and laboratory diagnosis of leptospirosis
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