All India Institute of Medical Sciences, Kalyani
Second Professional MBBS Examination 2021

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. Read the clinical history and answer the following questions:
   Mr. Karthik, 23-year-old MBBS student ordered a prawn biryani for dinner from a local hotel. Within 10 minutes of his dinner, he developed itching followed by urticarial rash all over the body. (1+2+3+3+1=10)
   Answer the following:
   a. What type of reaction is it?
   b. Write note on classification of these reactions.
   c. Discuss about the pathogenesis of this clinical condition.
   d. Describe the laboratory diagnosis.
   e. Which drugs are used for the treatment?

Write Short notes on: [8x5=40]

2. Transformation
3. Physical methods of sterilization
4. Bacterial growth curve
5. Hand hygiene
6. Describe in brief Koch's postulates along with its exceptions
7. Methods used for performing anti-microbial sensitivity testing for bacteria
8. Contribution of Louis Pasteur in Microbiology
9. Enumerate the differences between active immunity and passive immunity

SECTION – B (50 MARKS)

Long answer question:

1. Read the clinical history and answer the following questions:
   5-year-old child brought to the casualty with toxic look, swollen neck, high grade fever and inability to swallow. On examination a white patch was found on the tonsil. No history of immunization available. (1+3+3+3=10)
   Answer the following:
   a. What is the most probable diagnosis?
   b. Describe the pathogenesis and virulence factors.
   c. Discuss the Laboratory diagnosis.
   d. Treatment and prophylaxis.

Write Short notes on: [8x5=40]

2. Infections caused by Streptococcus *pyogenes*
3. Brucellosis
4. Explain the term MDR-TB and enlist methods for its detection
5. Discuss the pathogenesis of cholera
6. Scrub typhus
7. Laboratory diagnosis of M. *leprae*
8. Psittacosis
9. Gas gangrene