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**MANIPAL ACADEMY OF HIGHER EDUCATION**  
**SECOND MBBS DEGREE EXAMINATION – NOVEMBER 2023**

**SUBJECT: MICROBIOLOGY – PAPER I (ESSAY)**

(OLD REGULATION - 2018-19 & PRIOR BATCH)

Monday, November 06, 2023

Time: 10:20 – 13:00 Hrs.

Maximum Marks: 80

✍ **Answer all questions.**

✍ **Your answers should be specific to the questions asked. Draw neat, labeled diagrams wherever necessary**

✍ **Essay questions:**

1. Define and classify innate immunity. Describe the mechanisms of innate immunity.  
(1+2+7 = 10 marks)

2. A 45-year-old-man presented with a 3-month history of low-grade fever with evening rise in temperature and blood-tinged productive cough. He gave history of loss of appetite and weight loss during the past 3 months. Chest X-ray revealed nodular infiltrate in the apex of the right upper lobe. The clinician suspects Pulmonary TB. What is the etiological agent? Describe the pathogenesis and laboratory diagnosis of Pulmonary TB.

(1+4+5 = 10 marks)

3. **Write short notes on:**

3A. Draw a neat, labelled diagram of IgM. What are the functions of IgM?

3B. Immunoprophylaxis of tetanus.

3C. Laboratory diagnosis of Enteric fever.

3D. Enumerate 4 differences between exotoxins and endotoxins

3E. Gene transfer by conjugation.

3F. Laboratory diagnosis of Urinary tract infections.

3G. Mediators of Type I hypersensitivity

3H. Bacterial growth curve.

3I. Mechanisms of autoimmunity.

3J. Methicillin Resistant Staphylococcus Aureus

3K. Pathogenesis of brucellosis

3L. Cholera toxin

3M. Malignant pustule

3N. Laboratory diagnosis of Bacillary dysentery

3O. Classical complement pathway

(4 marks × 15 = 60 marks)

