

**MANIPAL ACADEMY OF HIGHER EDUCATION**  
**MELAKA MANIPAL MEDICAL COLLEGE (MANIPAL CAMPUS)**  
**MBBS PHASE - I STAGE - II DEGREE EXAMINATION – OCTOBER 2021**  
**SUBJECT: MICROBIOLOGY - PART - II (ESSAY)**

Wednesday, October 06, 2021

Time : 10.30 a.m. - 12.30 p.m.

Max. Marks : 60

- ✓ **Answer all the questions**
- ✓ **Draw diagrams wherever appropriate**

1. List the mechanisms of gene transfer in bacteria. Explain the mechanism of bacterial gene transfer mediated by bacteriophage with its significance.  
(1+4 = 5 marks)
2. Describe the working principle of sterilization by autoclave and list TWO sterilization control methods.  
(4+1 = 5 marks)
3. Describe the mechanisms of autoimmunity with examples.  
(5 marks)
4. Discuss the pathogenesis and laboratory diagnosis of cryptococcal meningitis.  
(2+3 = 5 marks)
5. Explain the pathogenesis and clinical manifestations of poliomyelitis.  
(3+2 = 5 marks)
6. Explain the laboratory diagnosis of pulmonary tuberculosis.  
(5 marks)
7. Describe the pathogenesis and laboratory diagnosis of ancylostomiasis.  
(3+2 = 5 marks)
8. Describe the etio-pathogenesis of enteric fever.  
(5 marks)

9. Explain the laboratory diagnosis of malaria. (5 marks)
10. A 25 year old hockey player developed an ulcerated lesion on her leg following an injury while practicing. The lesion was inflamed and tender. The pus sample collected from the lesion was sent to microbiology laboratory for investigations. Gram staining revealed gram positive cocci in clusters and pus cells. The isolate on blood agar grew haemolytic colonies which were coagulase positive.
- 10A. Identify the etiology.
- 10B. List FOUR virulence factors and describe their role in pathogenesis of the aforesaid condition.
- 10C. Explain the significance of the drug resistant strain of this agent.
- (1+4+2 = 7 marks)
11. A 55-year old man visited a physician with complaints of dysuria, increased frequency and urgency of micturition of two days duration. He did not have any fever or loin pain. Urine analysis showed pus cells and many gram negative bacilli. The culture isolate was motile and indole positive.
- 11A. Name the probable etiological agent.
- 11B. List FOUR predisposing factors for this condition.
- 11C. Discuss the laboratory diagnosis of this infection.
- (1+2+5 = 8 marks)

