

**MANIPAL ACADEMY OF HIGHER EDUCATION
MELAKA MANIPAL MEDICAL COLLEGE (MANIPAL CAMPUS)**

MBBS PHASE - I STAGE - II DEGREE EXAMINATION – NOVEMBER 2020

SUBJECT: MICROBIOLOGY - PART - II (ESSAY)

Wednesday, November 04, 2020

Duration : 120 minutes

Max. Marks : 60

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- ✓ **Answer all the questions**
 - ✓ **Draw diagrams wherever appropriate**
- 1. List the methods of gene transfer in bacteria and explain the method of gene transfer through plasmids
(2+3 = 5 marks)**
 - 2. Discuss the importance of MRSA in healthcare associated infections and explain the measures to control the infections caused by this bacterium.
(2+3 = 5 marks)**
 - 3. Explain the mechanism of Type I hypersensitivity and describe the action of mediators.
(3+2 = 5 marks)**
 - 4. A 4 year old child was brought to the hospital with complaints of high fever, vomiting and altered sensorium. On examination, nuchal rigidity and ecchymotic rashes on the trunk were noticed. Microscopy of the cerebrospinal fluid revealed plenty of intracellular gram negative diplococci with pus cells.**
 - 4A. Name the etiological agent.**
 - 4B. Mention the CSF changes seen in this case.**
 - 4C. Discuss the pathogenesis of this condition.**
 - 4D. Discuss the preventive measures
(1+2+3+2 = 8 marks)**

5. List the virulence factors of Bordetella pertussis and explain their role in pathogenesis.

(5 marks)

6. Explain the antigenic variations seen in influenza virus and discuss their significance.

(5 marks)

7. A 42-year-old homosexual male went to his physician with complaints of fatigue, abdominal pain and loss of appetite since one month. On physical examination, the sclera was icteric, liver was slightly enlarged and tender to palpation. Blood investigations revealed increased bilirubin and raised liver enzymes. Physician suspected it to be caused by a DNA virus.

7A. Identify the clinical condition

7B. Explain the pathogenesis of the specific viral infection

7C. Describe the serological diagnosis of this infection with the help of a graph

(1+2+4 = 7 marks)

8. Explain the etio-pathogenesis and laboratory diagnosis of malignant tertian malaria.

(5 marks)

9. Classify dermatophytoses based on anatomic location and discuss its laboratory diagnosis.

(2+3 = 5 marks)

10. A 33-year-old pregnant woman presented to the OBG for her routine antenatal check up. She complained of dysuria and frequency of micturition. Her urine culture revealed the growth of 10^5 CFU/ml of a lactose fermenting, motile, gram negative bacillus which was indole positive.

10A. Identify the etiological agent.

10B. Discuss the laboratory diagnosis of this condition

(1+4 = 5 marks)

11. Discuss the serological tests for the diagnosis of syphilis.

(5 marks)

