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MANIPAL ACADEMY OF HIGHER EDUCATION
MELAKA MANIPAL MEDICAL COLLEGE (MANIPAL CAMPUS)
MBBS PHASE – I STAGE – II DEGREE EXAMINATION – SEPTEMBER 2018
SUBJECT: MICROBIOLOGY – PAPER I (ESSAY)

Wednesday, September 12, 2018

Time : 9.00 a.m. - 11.00 a.m..

Max. Marks : 60

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- ✓ **Answer all the questions**
 - ✓ **Write the question number clearly in the margin**
 - ✓ **Draw diagrams wherever appropriate**

1. Compare and contrast the cell envelopes of Gram positive and Gram negative bacteria.
(2+2 = 4 marks)

2. Write the working principle and applications of autoclave.
(3+1 = 4 marks)

3. Explain the process of activation and functions of T cells.
(3+4 = 7 marks)

4. A 3-year-old boy was brought to the emergency department with high fever and neck rigidity. A spinal tap performed revealed turbid CSF which on microscopy showed gram negative pleomorphic bacilli along with neutrophils. The organism grew well in the presence of Staphylococcus aureus on blood agar. The child's mother informed the attending doctor that the baby had missed his primary immunization.
 - 4A. Identify the etiological agent in this case.
 - 4B. Discuss the pathogenesis of this condition.
 - 4C. Write the measures available for the prevention of this infection.(1+3+1 = 5 marks)

5. Describe the pathogenesis and prophylaxis of poliomyelitis.
(3+2 = 5 marks)

6. Explain the antigenic variations in influenza virus with its epidemiological significance.
(5 marks)

7. Explain the laboratory diagnosis of enteric fever.
(5 marks)

8. An outbreak of diarrhea took place in a village following a community gathering. The people developed watery diarrhea, nausea, vomiting and dehydration. Stool examination revealed actively motile comma shaped bacteria. The isolate was a non-lactose fermenter and oxidase positive.

8A. Identify the causative agent.

8B. Describe the pathogenesis of this condition.

(1+4 = 5 marks)

9. Describe the laboratory diagnosis of malaria.

(5 marks)

10. A 32-year old pregnant woman presented to OBG clinic with increased urinary frequency, dysuria and low-grade fever. Urine analysis showed pyuria. On culture, lactose fermenting colonies were isolated which were gram negative motile bacilli.

10A. Write the specimen collection method for the diagnosis of above case.

10B. Explain the culture method employed and state the significance of this method.

(1+5 = 6 marks)

11. Based on the anatomic locations classify dermatophytoses with the causative agent.

(4 marks)

12. Enumerate the structural genes of Human Immunodeficiency Virus and explain their role in pathogenesis

(5 marks)

