

Batch 40, March 2019

Question Paper

Exam Date & Time: 04-Mar-2019 (10:00 AM - 12:30 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION
MELAKA MANIPAL MEDICAL COLLEGE (MANIPAL CAMPUS)
MBBS PHASE - I STAGE - II DEGREE EXAMINATION - FEBRUARY/MARCH 2019
Monday, March 04, 2019 Microbiology [M2MIC]
MICROBIOLOGY - PART - II (ESSAY)

Section Duration: 120 mins

Max. Marks : 60

Answer all the questions

Draw diagrams wherever appropriate

1. Define hypersensitivity. Explain the mechanism of hypersensitivity reaction mediated by reaginic antibody.
(1+4 = 5 marks)
2. A 10-year-old boy was admitted to hospital with severe dehydration. His parents informed that he had several episodes of watery diarrhoea and vomiting for the last 24 hours. He was afebrile. Stool sample was collected for microbiological investigations which revealed gram negative bacilli that were actively motile. Culture isolate was oxidase positive and showed yellow coloured colonies on the selective medium.
2A. Identify the causative agent.
2B. Explain the pathogenesis of this clinical condition.
(1+4 = 5 marks)
3. Explain the pathogenesis and laboratory diagnosis of *Ancylostoma duodenale* infection.
(3+2 = 5 marks)
4. With the help of graphs, describe the diagnostic significance of Hepatitis B virus seromarkers.
(5 marks)
5. Classify the methods of sterilization. Describe the working principle of autoclave.
(2+3 = 5 marks)

6. A 65-year-old man visited medicine OPD complaining of high fever, chills, cough and severe muscular aches since one week. Considering his very weak condition, he was hospitalized for further management. The treating physician noticed some other patients with similar illness and suspected a seasonal viral outbreak. Nasopharyngeal specimens were taken from all these patients which when subjected to PCR assay, reported to be positive for a RNA virus with segmented genome.
- 6A. Name the viral agent causing the outbreak in the above mentioned case.
- 6B. Discuss the role of antigenic variations in the pathogenesis of this outbreak.
- (1+4 = 5marks)
7. Discuss the immunoprophylaxis of poliomyelitis.
- (5 marks)
8. Explain the pathogenesis of tuberculosis.
- (5 marks)
9. Name the methods of gene transfer in bacteria. Explain the mechanism of gene transfer between bacteria through plasmids.
- (2+3 = 5 marks)
10. A 37 year old businessman presented to STD clinic with maculopapular rashes on soles and palms. He gave the history of painless genital ulcer three months back, which healed without any treatment. He also revealed that he had multiple sexual partners.
- 10A. What is the clinical condition and name the causative agent.
- 10B. Discuss the serological diagnosis in the abovecase.
- (1+4 = 5 marks)
11. Classify dermatophytes based on the anatomic location of infection. Discuss the laboratory diagnosis of dermatophytoses.
- (2+3 = 5marks)
12. Define healthcare associated infection. Explain the investigation of healthcare associated infections.
- (1+ 4 = 5 marks)

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