

Roll No.

Total No. of Pages : 03

Total No. of Questions : 12

Master of Science (Medical Microbiology) (Sem.-3)

VIROLOGY AND MYCOLOGY

Subject Code : MMB-301-21

M. code : 92525

Date of Examination : 03-07-2025

Time : 3 Hrs.

Max. Marks : 70

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains EIGHT questions carrying FIVE marks each and students have to attempt any SIX questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

SECTION-A

1. Write short notes on :

- a) Define virology and discuss its significance in understanding infectious diseases.
- b) Explain the classification and nomenclature of viruses based on their properties and genetic material.
- c) Describe the structure of viruses, highlighting the composition of their capsid and envelope.
- d) Discuss the process of cultivation of viruses in laboratory settings.
- e) Compare and contrast the lysogenic and lytic cycles in bacteriophages with examples.
- f) Explain the transmission and epidemiology of viral infections, emphasizing prevention and control measures.
- g) Discuss the pathogenicity and medical features of selected viral infections such as influenza and hepatitis.
- h) Define medical mycology and outline its scope in the study of fungal infections.
- i) Describe the introduction and classification of fungi, focusing on their morphological characteristics.
- j) Analyze the laboratory diagnosis of selected superficial mycoses.

SECTION - B

2. Discuss the role of virus receptors and their interaction with host cells during the infection process.
3. Explain the molecular techniques used for the clinical diagnosis of viral diseases, highlighting their advantages and limitations.
4. Analyze the pathogenicity and medical features of selected viral infections, such as dengue and HIV.
5. Describe the epidemiology and control measures for viral diseases like Japanese encephalitis and yellow fever.
6. Outline the laboratory diagnosis and immunoprophylaxis strategies for hepatitis and rabies.
7. Discuss the transmission, clinical features and laboratory diagnosis of rotavirus infection.
8. Compare and contrast the pathogenicity, clinical features, and laboratory diagnosis of superficial mycoses like dermatophytosis and subcutaneous mycoses such as sporotrichosis.
9. Analyse the pathogenesis, clinical manifestations and laboratory diagnosis of systemic mycoses including histoplasmosis and candidiasis.

SECTION - C

10. Evaluate the recent advances in molecular techniques utilized for the diagnosis and management of viral infections, discussing their impact on patient care.
11. Discuss the challenges and opportunities in the development of vaccines for emerging viral diseases, considering factors such as antigenic variability and vaccine delivery.
12. Critically analyse the strategies for the prevention and control of fungal infections in healthcare settings, considering issues such as antifungal resistance and infection control measures.

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.