

1 (Sem-4) BV MHS 3

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**MEDICAL LABORATORY AND MOLECULAR
DIAGNOSTIC TECHNOLOGY/MEDICAL
LABORATORY TECHNICIAN**

Paper : MHS0400304

(Introduction to Mycology and Virology)

Full Marks : 45

Time : 2 hours

*The figures in the margin indicate full marks
for the questions*

1. Fill in the blanks : 1×5=5

- (a) The common laboratory medium for fungal cultivation is ____ Agar.
- (b) The causative agent of poliomyelitis is an ____ virus.
- (c) HIV primarily attacks the ____ cells of the immune system.
- (d) ____ viruses are transmitted by arthropod vectors.
- (e) Hepatitis B virus is a ____ DNA virus.

(2)

2. Answer any *five* of the following questions :

2×5=10

- (a) Define mycology and state its significance in medical microbiology.
1+1=2
- (b) Mention any two common methods of reproduction in fungi.
- (c) Name two human diseases caused by *Candida albicans*.
- (d) What are dimorphic fungi? Give one example.
1+1=2
- (e) Mention any two opportunistic fungal infections seen in immunocompromised individuals.
- (f) What are inclusion bodies in the context of viral infections? Give one example.
1+1=2
- (g) Name two arboviruses and mention the vectors that transmit them.
- (h) List any two viruses responsible for causing gastroenteritis.
- (i) Write any two differences between DNA viruses and RNA viruses based on structure or replication.
- (j) Name the virus responsible for German measles and mention one key symptom of the disease.
1+1=2

(3)

3. Answer any *four* of the following questions :

5×4=20

- (a) Define fungi. Classify fungi with suitable examples.
1+4=5
- (b) Write a short note on mycotoxins and their health effects.
3+2=5
- (c) Write a short note on mycetoma and sporotrichosis.
- (d) Describe the laboratory diagnostic methods for viral diseases.
- (e) Write a short note on rabies virus and its prevention.
3+2=5
- (f) Describe the clinical features and diagnosis of hepatitis B.
- (g) Describe the different methods used for the cultivation of viruses.
- (h) Mention the general properties of virus.

4. Answer any *one* of the following questions : 10

- (a) Describe the clinical features, pathogenesis, and laboratory diagnosis of dermatophytosis.
3+4+3=10

(4)

- (b) Describe *Candida albicans* in detail with reference to its pathogenesis, clinical features, and methods of diagnosis.

4+3+3=10

- (c) Explain how viruses are classified. Describe the main groups of viruses based on the type of nucleic acid they contain, with suitable examples. 3+7=10

- (d) Explain the process of viral replication and illustrate it with a neat labeled diagram.

- (e) Describe HIV infection with reference to its pathogenesis, clinical stages, and methods of laboratory diagnosis. 4+3+3=10

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