

(6 pages)

Reg. No. : .....

Code No. : 5545

Sub. Code : ZMBM 23

M.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2023.

Second Semester

Microbiology — Core

VIROLOGY

(For those who joined in July 2021 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The term filterable viruses was coined by \_\_\_\_\_  
(a) Beijerinck (b) Iwanowski  
(c) Twort (d) d'Herelle
2. Which of the following viruses possess an envelope?  
(a) Herpes virus (b) Reo virus  
(c) TMV (d) Papilloma virus

3. What are sticky ends ?  
(a) Ends of M13 vector  
(b) 12 nucleotide stretch in lambda phage  
(c) The replicated product of phage DNA  
(d) Ends of two sides of origin
4. At what temperature incubation is required for the adsorption of phage T4 and DNA injection in to *E.coli*?  
(a) 50°C (b) 15°C  
(c) 37°C (d) 80°C
5. Which of the following organelle prevents the entry of viruses in plant cells?  
(a) Cell wall (b) Golgi bodies  
(c) Plasma membrane (d) Mitochondria
6. Which of the following insects is known to transmit sugarcane viruses?  
(a) Beetles (b) Aphids  
(c) Spiders (d) Ants

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7. What is the function of neuraminidase viral protein?  
(a) Attaches to the cell surface receptor  
(b) Responsible for the release of the progeny viral particles from the infected cells  
(c) Phagocytosis  
(d) Division
8. Which of the following viruses are best known for latent infections?  
(a) Herpes virus (b) Polio virus  
(c) HIV (d) Rhinovirus
9. Which of the following virus can give lifelong immunity to the disease after prior infection or immunization?  
(a) Rhino virus (b) Influenza A virus  
(c) Influenza C virus (d) Measles virus
10. True about prions  
(a) Viruses which are genetically deficient  
(b) Viral components may be synthesized but maturation and assembling is defective  
(c) Phase in which virus cannot be demonstrated in host cells  
(d) Composed largely proteins without any nucleic acid

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PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Write the unique properties of viruses.  
Or  
(b) Give a short note on evolution of viruses.
12. (a) Explain the properties of iX174.  
Or  
(b) Briefly explain the structure and genetic map of Mu phage.
13. (a) Write short note on TMV.  
Or  
(b) Write about the viral disease of sugarcane.
14. (a) Elucidate the characteristics of Mumps.  
Or  
(b) Write a brief account on tumour viruses of human.

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[P.T.O.]

15. (a) Explain the taxonomy, replication, infectivity pattern, symptoms of viroid infection.

Or

- (b) Prepare the concepts of viral vaccines and its types.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Elaborate the development of virology.

Or

- (b) Organize the ICTV system of virus classification.

17. (a) Write about the structure and life cycle of lambda phage.

Or

- (b) Give a detailed account on structure and lytic life cycle of T4 phage.

18. (a) Elaborate the structure, genome, replication, symptoms and control of cauliflower mosaic virus disease.

Or

- (b) Give a detailed account on viral diseases of paddy.

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19. (a) Write in detail about the morphology, pathogenesis, genetic modifications and lab diagnosis of influenza virus.

Or

- (b) Elaborate the structure, pathogenesis and clinical forms of Adenovirus infections.

20. (a) Give a short note on :

(i) Cyanophages

(ii) Mycophycophages

(iii) Insect viruses.

Or

- (b) Write a detailed account on antiviral agents used to treat viral infections in man.

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