

(6 pages)

Reg. No. : _____

Code No. : 30550 E Sub. Code : CMMI 52

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2023

Fifth Semester

Microbiology – Core

VIROLOGY

(For those who joined in July 2021-2022)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Why are viruses referred as obligate parasites?
 - (a) They invariably kill any cell they infect
 - (b) They cannot reproduce outside of a host cell
 - (c) Viral DNA always inserts itself in to host DNA
 - (d) They must use enzymes encoded by the virus itself

7. The influenza virus has complicated genetics mainly characterized by which of the following?
 - (a) Genetic reassortment among eight genes
 - (b) High levels of recombination
 - (c) Rapid adsorption and fusion without via hydrophobic peptides
 - (d) High fidelity RNA replicase enzymes

8. Which unique form does the rabies virus take?
 - (a) The Virion has a dumb bell appearance
 - (b) It is shaped like a bullet from a gun
 - (c) The virus is star shaped
 - (d) The Virion is very pleomorphic

9. Quantification of viruses can do by _____?
 - (a) Plaque assay
 - (b) Haemagglutination assays
 - (c) Serological assays
 - (d) All of the above

2. Which of the following molecules make up the viral envelope?
 - (a) Glycoprotein
 - (b) Protein sugars
 - (c) Carbohydrates
 - (d) Carbohydrates

3. The Baltimore classification was based on the importance of _____?
 - (a) DNA
 - (b) m RNA
 - (c) r RNA
 - (d) t RNA

4. What is the most important factor for virus classification?
 - (a) The geometry of the virus
 - (b) How many proteins the virus has
 - (c) The disease the virus causes
 - (d) Chemistry of the DNA and RNA

5. The Bunchy top of banana virus is a _____
 - (a) ss DNA
 - (b) ss RNA
 - (c) ds DNA
 - (d) ds RNA

6. Lysogenic strains are also called _____
 - (a) Temperate phages
 - (b) Avirulent phages
 - (c) Both (a) and (b)
 - (d) None of the above

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10. Which of the following is easily blocked by antivirals?
 - (a) Virus penetration
 - (b) Nucleic acid replication
 - (c) Virus adsorption
 - (d) Removal of the virus from the cell

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) With neat diagram explain different routes of chick embryo inoculation to cultivate viruses.

Or

 - (b) Explain molecular diagnostic methods to diagnose viral diseases.
12. (a) Outline the Baltimore classification of viruses.

Or

 - (b) Discuss the properties used in virus classification.

13. (a) Write short notes on viroid.
Or
(b) Explain the isolation of coli phages.
14. (a) Explain about the characteristics of prions
Or
(b) Write about the diagnostic importance of Hepatitis B surface markers.
15. (a) Explain the plaque assay used to quantify viruses.
Or
(b) Write a short note on mode of action of antiviral agents with examples.

PART C – (3 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Elaborate the tissue culture methods of cultivation of viruses.
Or
(b) Briefly explain different diagnostic methods used in virology.

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17. (a) Explain the classification of animal viruses.
Or
(b) Outline the classification of Bacteriophages.
18. (a) Write in detail about the transmission, growth, disease cycle and control of Banana leaf blight.
Or
(b) With neat diagram explain the Lytic cycle of Bacteriophages.
19. (a) Explain the morphology, pathogenesis and laboratory diagnosis of Hepatitis B virus infection.
Or
(b) Write in detail about foot and mouth disease.
20. (a) Elaborate the methods used in purification and characterization of viruses.
Or
(b) Give a detailed account on viral vaccines.

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