

(6 pages)

Reg. No. :

Code No.: 10385E

Sub. Code: EMMI52

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2025.

Fifth Semester

Microbiology -Core

Major - VIROLOGY AND PARASITOLOGY

(For those who joined in July 2023 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer:

1. Which of the following is NOT a property of viruses?
 - (a) Obligate intracellular parasitism
 - (b) Presence of either DNA or RNA, but not both
 - (c) Ability to multiply in cell-free media
 - (d) Lack of cellular organelles

2. Which of the following is an example of primary cell culture?
 - (a) HeLa cells
 - (b) Monkey kidney cells obtained directly from tissue
 - (c) Vero cells
 - (d) Hep-2 cells
3. Hepatitis B virus belongs to which family?
 - (a) *Picornaviridae*
 - (b) *Hepadnaviridae*
 - (c) *Flaviviridae*
 - (d) *Caliciviridae*
4. Which cell surface molecule is the main receptor for HIV entry?
 - (a) CD3
 - (b) CD4
 - (c) CD8
 - (d) CCR5
5. The vector for Chikungunya virus transmission is:
 - (a) *Anopheles* mosquito
 - (b) *Culex* mosquito
 - (c) *Aedes aegypti* mosquito
 - (d) Sandfly

6. ELISA detects viral infection by identifying:
- (a) Viral RNA only
 - (b) Viral DNA only
 - (c) Antigens
 - (d) Viral enzymes
7. Which disease is caused by *Entamoeba histolytica*?
- (a) Amoebic dysentery
 - (b) Giardiasis
 - (c) Kala-azar
 - (d) Malaria
8. Which stain is commonly used for malaria parasite detection in blood smears?
- (a) Gram stain
 - (b) Wright's stain
 - (c) Giemsa stain
 - (d) Ziehl-Neelsen stain
9. Microfilariae of *Wuchereria bancrofti* are best detected in:
- (a) Daytime blood samples
 - (b) Night blood samples
 - (c) Urine
 - (d) Stool

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10. Which technique is best for concentrating light ova in stool samples?
- (a) Formalin-ether sedimentation
 - (b) Zinc sulfate floatation
 - (c) Kato-katz method
 - (d) Trichrome staining

PART B — (5 × 5 = 25 marks)

Answer ALL questions by choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Name three routes of virus inoculation into embryonated eggs.
- Or
- (b) State the different stages of viral replication.
12. (a) State the antigenic structures of influenza virus.
- Or
- (b) Add a note on cancers associated with HPV infection.

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13. (a) List out any two serological and two molecular techniques for virus detection.

Or

- (b) Define interferons and state their main types.

14. (a) State the infective stage and mode of transmission of *Giardia lamblia*.

Or

- (b) Describe the laboratory diagnosis of giardiasis.

15. (a) Briefly explain the life cycle of *Ascaris lumbricoides*.

Or

- (b) List three nematode parasites and the diseases they cause.

PART C — (5 × 8 = 40 marks)

Answer ALL questions by choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Discuss the advantages of using embryonated eggs in virus cultivation.

Or

- (b) Explain the basis of Baltimore classification.

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17. (a) Discuss the pathogenesis and stages of rabies infection in humans.

Or

- (b) Explain the role of MMR vaccine in controlling the diseases.

18. (a) Compare the causes, mode of spread and preventive measures of SARS and Swine flu.

Or

- (b) Evaluate the importance of mass vaccination in eradicating viral diseases.

19. (a) Describe the morphology, life cycle, clinical manifestations and laboratory diagnosis of *Plasmodium falciparum*.

Or

- (b) Compare and contrast the pathogenic mechanisms of *Entamoeba histolytica*.

20. (a) Discuss the morphology, transmission, clinical features and prevention of *Wuchereria bancrofti*.

Or

- (b) Describe the life cycle, pathogenesis, clinical features, laboratory diagnosis and treatment of *Taenia solium*.

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