(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

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.

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.

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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