



KISII UNIVERSITY
UNIVERSITY EXAMINATIONS

SPECIAL/SUPPLEMENTARY EXAMINATIONS
THIRD YEAR EXAMINATION FOR THE AWARD OF THE DEGREE OF
BACHELOR OF SCIENCE IN MEDICAL LABORATORY SCIENCES
FIRST SEMESTER, 2024/2025
(AUGUST, 2025)

MELS 366: MEDICAL VIROLOGY

STREAM: Y3S1

TIME: 2 HOURS

DAY: FRIDAY, 3:00-5:00 PM

DATE: 15/08/2025

INSTRUCTIONS

- 1. Do not write anything on this question paper.***
- 2. Attempt A, B and C.***

Section A comprise of M.C.Q.

1. Write the correct answer in the first page of the answer booklet provided.

Section B comprises of Short Easy Questions.

2. Attempt all the questions. Make sure you understand the question before answering.

Section C comprises of Long Easy Questions.

3. Question one is compulsory and choose any other one additional question

SECTION A-MCQS (ANSWER ALL QUESTIONS)-20 MARKS

1. Which of the following scientists demonstrated that yellow fever was caused by a virus, spread by mosquitoes?
 - a) Max Theiler
 - b) Francis Peyton Rous
 - c) Frederick Twort's
 - d) Walter Reed
2. Which of the following is the best term for bacteriophages that can enter into stable, long-term relationships with their host?
 - a) Lytic phages
 - b) Defective phages

- c) Virulent phages
 - d) Temperate phages
3. Reverse transcriptase is an enzyme involved in the synthesis of _____?
 - a) DNA
 - b) Soluble RNA
 - c) m-RNA from DNA
 - d) Nucleotides
 4. Which of the following is associated with genital warts?
 - a) HHV-2
 - b) HPV
 - c) Chicken pox
 - d) Burkitt's lymphoma
 5. Which of the following viruses are known to produce genome DNA by reverse transcription with mRNA as the template?
 - a) Hepadnaviruses
 - b) Retroviruses
 - c) Influenza viruses
 - d) SARS
 6. Chicken pox undergoes latency in dorsal root ganglia in spinal cord where it may be reactivated later in old age manifesting as _____
 - a) Varicella Zoster
 - b) *Kaposi's sarcoma*
 - c) Shingles
 - d) *Reseola infantum*
 7. Which of the following is a defective virus?
 - a) Influenza
 - b) SARS
 - c) Marburg
 - d) Hepatitis D
 8. The Production of RNA from DNA is called?
 - a) Translation
 - b) RNA splicing
 - c) Transcription
 - d) Transposition
 9. Koplik's spots (enanthems of the buccal mucosa) presents seen in: -
 - a) Mumps
 - b) Parainfluenza B
 - c) Influenza A & B
 - d) Measles
 10. Lyophilization means?
 - a) Sterilization
 - b) Freeze-drying
 - c) Burning to ashes

- d) Exposure to formation
11. Which of the following viruses can remain latent (usually in neurons) for many years?
- a) Togaviruses
 - b) Herpesviruses
 - c) Enteroviruses
 - d) Retroviruses
12. Which of the following viruses can cause eye infection?
- a) Herpes simplex virus
 - b) Coxsackie B virus
 - c) Coxsackie A virus
 - d) Kaposi's sarcoma
13. The brain biopsy of an infected rabid dog may contain?
- a) Nergi bodies
 - b) Niagri bodies
 - c) Negri bodies
 - d) Neisser bodies
14. Mumps virus belong to which of the following?
- a) Retroviridae
 - b) Paramyxoviridae
 - c) Orthomyxo viridae
 - d) None of these
15. Ethanol is one of the most commonly used disinfectants. Which concentration is most effective for this purpose
- a) 100%
 - b) 70%
 - c) 50%
 - d) 30%
16. Which of the following is the marker of HIV infection in blood?
- a) Reverse transcriptase
 - b) DNA polymerase
 - c) RNA polymerase
 - d) None of these
17. Which of the following vectors transmit West Nile Virus?
- a) *Aedes africanus* spp.
 - b) *Aedes aegypti*
 - c) Anopheles species
 - d) *Culex pipiens*
18. Which of the following is the smallest virus?
- a) Parvo virus
 - b) Rhabdo virus
 - c) Pox virus
 - d) Adeno virus

19. Which of the following viruses is Bullet shaped?
- Poliovirus
 - Rabies virus
 - Poxvirus
 - Tobacco Mosaic virus
20. Attenuated, oral poliomyelitis vaccine is?
- BCG
 - Salk vaccine
 - Sabin vaccine
 - TAB vaccine

**SECTION B SHORT STRUCTURED QUESTIONS (ANSWER ALL QUESTIONS)-
(20 MARKS)**

- Highlight the importance of electron microscopy in virus detection (5 marks)
- Differentiate between antigenic shift and antigenic drift (5 Marks)
- Highlight the liver function tests used to monitor Hepatitis B Virus infection (5 Marks)
- Differentiate between whole live attenuated and killed virus vaccine (5 Marks)

**SECTION C-ASSAY QUESTIONS (QUESTION ONE IS COMPULSORY THEN
CHOOSE ANY OTHER ONE QUESTION)-30 MARKS**

- You have been appointed as the Departmental Head of Medical Virology Diagnostic Laboratory, a newly designed laboratory. Discuss the tests you would put in place to ensure that viruses are well diagnosed.
- Discuss the pathogenesis of Herpesviruses.
- Discuss the replication and life cycle of HIV/Virus