



# TECHNICAL UNIVERSITY OF MOMBASA

*Faculty of Applied and Health Sciences*

**DEPARTMENT OF MEDICAL SCIENCES**

DIPLOMA IN MEDICAL LABORATORY SCIENCES  
(DMLS)

**AML 2202 : MEDICAL VIROLOGY I**

**SPECIAL/SUPPLEMENTARY: EXAMINATIONS**

**SERIES: OCTOBER 2013**

**TIME: 2 HOURS**

## **INSTRUCTIONS:**

You should have the following for this examination

- *Answer booklet*

This paper consists of **TWO** sections.

Answer all questions in **Section A** and **B**.  $\frac{1}{2}$  marks deducted for any wrong answer in **Section A**.

*This paper consists of 9 PRINTED pages*

**SECTION A (40MARKS)**

1. Which of the following is not a natural route of laboratory acquired infections
  - a) Eye
  - b) Brain
  - c) Lung
  - d) Skin
  
2. Which of the following statement is true about laboratory acquired infections
  - a) Do not occur in untrained staff
  - b) Route of infection may be the same as natural route
  - c) Do not occur in research institutes
  - d) Route of infection may not be the same as the natural route.
  
3. Which of the following statements is true about group II organisms
  - a) Organisms does not cause disease
  - b) Are hazardous to laboratory workers
  - c) Are hemorrhagic
  - d) None of the above
  
4. Which of the following is not an example of group 3 organisms
  - a) Hanta virus
  - b) Japanese B. Encephalitis
  - c) Small pox virus
  - d) Lassa fever
  
5. Which type of sterilization is used for through decontamination
  - a) Formalin
  - b) Fumigation
  - c) Glutaraldehyde
  - d) None of the above
  
6. Which of the following is true about the health of staff in the virology laboratory
  - a) Have a pre-employment medical examination
  - b) Should not be monitored
  - c) Group evaluation should be done
  - d) Expectant women should not be employed
  
7. Give an example of available vaccines for viruses
  - a) Rebella virus
  - b) Rift valley fever virus
  - c) Russian spring summna virus
  - d) All of the above
  
8. Give example of equipment found in the virology laboratory
  - a) Pipettes
  - b) Cetrifuge
  - c) Culture plates

- d) All of the above
9. Which of the following is not a protein subunit to the surface of a viral envelope
- Neuraminidases
  - Haemagglutinins
  - Receptors
  - None of the above
10. Which of the following is contained the viral genome
- RNA and DNA strands
  - Lipoprotein coat
  - RNA or DNA strands
  - None of the above
11. The symmetry of the virus is defined by
- Genome
  - Capsid
  - Envelope
  - None of above
12. The viral envelope consists of the following EXCEPT
- Glycoproteins
  - Lipids
  - Lipoproteins
  - Receptors
13. What is the main function of the capsid
- Production of viral enzymes
  - Viral genome protection
  - Main criteria of viral classification
  - None of the above
14. Which of the following is a principle embodied in the classification nomenclature of viruses
- Viruses should be grouped according to their shared properties
  - Viruses should be grouped without their showed properties
  - According to properties of host cells
  - None of the above
15. The following are main characteristics used in viral taxonomy except?
- Presence of an envelope
  - Directs on the virus and capsid
  - Symmetry of the capsid
  - Nature of the nucleic acid
16. Which of the following statement is true about viruses
- Viruses must generate positive strand mRNAs from their genomes for replication viruses have both DNA and RNA genomes
  - Replication of viruses depends on the DNA

- c) All of the above
  - d) All of the above
17. Which of the following is not an example of double stranded DNA virus
- a) Adenoviruses
  - b) Reo viruses
  - c) Herpes viruses
  - d) Pox viruses
18. Which of the following of statement is true about single stranded positive sense DNA viruses
- a) Involves formation of negative sense strand
  - b) Examples include poxviruses
  - c) Replication access in the cytoplasm
  - d) Replication occurs in the nucleus
19. Which of the following is true about double stranded RNA viruses
- a) Replication occurs in the nucleus
  - b) Have segmented genomes
  - c) Examples include parvoviruses
  - d) Have circular genomes
20. Which of the following is true about single stranded + sense RNA
- a) Translation results in the formation of monocistronic mRNAs
  - b) Genome RNA is the same as mRNA
  - c) Examples include reoviruses
  - d) Have segmented genome
21. Orthomyxoviruses belong in which Baltimore classification group
- a) VI
  - b) VII
  - c) V
  - d) II
22. Which of the following Baltimore classification group of viruses are DIPLOID
- a) VII
  - b) VI
  - c) V
  - d) IV
23. Which of the following viruses rely on reverse transcription
- a) Paramyxoviruses
  - b) Adenoviruses
  - c) Hepadnaviruses
  - d) Retroviruses
24. Give example of disease caused by parvoviruses
- a) Ebola
  - b) Warts
  - c) Fetal death

- d) Human papilloma viruses
25. What is the size of adenoviruses
- 70-90nm
  - 80-90nm
  - 90-100nm
  - 110 – 120nm
26. Molluscum contagiosum is caused by
- Herpes viruses
  - Pox viruses
  - Papova viruses
  - None of the above
27. Cytomegalovirus infection results in
- Birth defect
  - Blindness
  - Rashes
  - Lesions
28. Which of the following is true about herpes viruses
- Are double stranded DNA with a segmented genome
  - Are single stranded DNA, naked with a polyhedral capsid
  - Are double stranded DNA, envelopes with a polyhedral capsid
  - None of the above
29. The following are example of viruses in the family piconavindae except?
- Noro viruses
  - Rubella viruses
  - Hepatitis A viruse
  - Echo viruses
30. The following virus families belong to positive stranded RNA enveloped and usually with apolyhedral capsid except?
- Reo viruses
  - Toga viruses
  - Flavi viruses
  - Corona viruses
31. Give example of viral disease caused by viruses in the flavi virus family
- Hepatitis C
  - Germen measles
  - Common cold
  - SARs
32. What is the shape of rhabdo viridae
- Helical
  - Bullet

- c) Filamentous
  - d) Circular
33. Which of the following viruses are pleomorphic
- a) Paramyxoviridae
  - b) Orthomyxoviridae
  - c) Bunya viridae
  - d) None of the above
34. Give example of disease caused by retroviridae
- a) T-cell leukemia
  - b) Lymphocytic choriomeningitis
  - c) Respiratory infection
  - d) Haemorrhagic fevers
35. Which of the following viruses are double stranded RNA naked and with apolyhedral capsid
- a) Retroviruses
  - b) Parvoviruses
  - c) Paroviruses
  - d) Reoviruses
36. Which of the following statements is true for level 4 animal houses
- a) Waste decontamination before removal
  - b) Should have full access
  - c) No changing room and shower
  - d) All of the above
37. Which of the following is true about level animal houses
- a) Have arthropod control
  - b) Precontamination of waste before disposal
  - c) Controlled access
  - d) All of the above
38. Which of the following laboratories are known for isolation of viruses
- a) Biosafety level 1
  - b) Biosafety level 2
  - c) Biosafety level 3
  - d) Biosafety level 4
39. The following viruses have been described as laboratory acquired except?
- a) Lassa fever
  - b) Influenza
  - c) Ebola
  - d) Smallpox
40. Viruses are acquired orally through
- a) Animal bites
  - b) Drinking
  - c) Sharp instruments

d) Inhalation

### SECTION B

- 1) Describe the laboratory procedure for suspected hazard group 4 pathogeno **(20marks)**
- 2) (a) Describe mRNA production **(10marks)**  
(b) Name 5 DNA and 5 RNA virus **(10marks)**
- 3) a) Describe safety in handling carbovars **(10marks)**  
b) Describe decontaminates of the following  
(i) Spillages **(5marks)**  
(ii) Personal protective equipment **(5marks)**