



TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF MEDICAL SCIENCES

UNIVERSITY EXAMINATION FOR:

DMLS

AML 2203 : MEDICAL VIROLOGY 1

END OF SEMESTER EXAMINATION

SERIES: AUGUST 2017

TIME: 2 HOURS

DATE: Pick Date Select Month Pick Year

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of **TWO** Section(s). Attempt ALL questions.

Circle the correct answer in section A.

Section A

1. Viral capsid can be defined as
 - a) The outer most protein coat of a virus
 - b) The viral protein coat enclosing viral genome
 - c) A viral protein coat with some peplomers
 - d) The protein coat responsible for viral antigenicity in naked viruses

2. Which statement is true about Haemadsorption
 - a) It is the attachment of viruses on erythrocytes
 - b) It is the attachment of erythrocytes on to infected cells
 - c) It is limited to haemagglutinin positive viruses only
 - d) It is limited to haemagglutinin negative viruses only

3. Magnus phenomenon is-----
 - a) When viral yield has high haemagglutinin titre
 - b) When viral yield has high haemagglutinin titre but low infectivity
 - c) When viral yield has high infectivity but low haemagglutinin titre
 - d) An effect of abnormal replicative cycle

4. The following are enveloped viruses except
 - a) Influenza virus
 - b) Herpes simplex virus
 - c) Yellow fever virus
 - d) Rhino viruses

5. Which of the following is not used in viral classification
 - a) Affinity to different system
 - b) Degree of pathogenicity
 - c) Symptoms associated with the infection
 - d) Presence of the capsid

6. Which of the following is not true about the viral genome
 - a) Can either be segmented or non-segmented
 - b) Can be capsulated or non-capsulated
 - c) Can be double or single stranded
 - d) Can be circular or linear

7. The following uses RNA/DNA intermediate during transcription of mRNA
 - a) Herpes simplex virus
 - b) Hepatitis B virus
 - c) Crimean- congo haemorrhagic fever virus
 - d) Human Immunodeficiency virus

8. Rabies virus is transmitted via
 - a) Faecal oral route
 - b) Vector bites
 - c) Canine bites
 - d) Respiratory droplets

9. The following are virus shapes except
 - a) Rod
 - b) Bullet
 - c) cocci
 - d) Tadpole

10. The following viral diseases are spread by respiratory droplets
 - a) Smallpox
 - b) Adeno viruses
 - c) Coxsackie
 - d) Hawaii virus

11. Which of the following belongs to the family of Retro viruses
 - a) Hepatitis B virus
 - b) Herpes simplex virus
 - c) HIV
 - d) Rotavirus

12. Interferons can be described as-----
 - a) Viral coded glycoproteins that inhibit replication

- b) Host coded glycoproteins produced in response to virus infection on other inducers
 - c) Host coded glycoproteins involved in the 1st line defence.
 - d) Host coded lipoprotein receptors
13. The Dane particle is also known as-----
- a) Adeno virus
 - b) Herpes virus
 - c) Hepatitis B virus
 - d) Marburg virus
14. Which of the following is not a component of cell mediated immunity?
- a) T cytotoxic cells
 - b) T neutralising cells
 - c) T helper cells
 - d) T suppressor cells
15. The smallest viruses are found in the family of-----
- a) Parvoviridae
 - b) hepadenoviridae
 - c) orthomyxoviridae
 - d) poxviridae
16. Viral size can be determined through the following except
- a) use of electron microscope
 - b) use of colloidin membrane filters of graded pore size
 - c) use of ultracentrifugation
 - d) use of mass spectrometer
17. The following are characteristics of viruses except
- a) viruses are acellular
 - b) lack cellular organization
 - c) can exist independently outside their host
 - d) contain either RNA or DNA
18. Which of the following is a rod shaped viruses
- a) Ebola
 - b) Marburg
 - c) Rhabdo viruses
 - d) Small pox
19. Which of the following determines the host range in viruses
- a) Viral DNA
 - b) Viral envelop
 - c) Viral capsid
 - d) Viral surface receptors
20. Bacteriophages are
- a) Viruses that infect animals

- b) Viruses that invade the respiratory system
 - c) Bacteria that infect viruses
 - d) Viruses that infect bacteria
21. One of the following is an Oncogenic virus
- a) Marburg
 - b) Influenza A
 - c) Rous sarcoma
 - d) Reo viruses
22. One of the following is true about the defective viruses
- a) They replicate in host cells
 - b) They are infective outside the host cells
 - c) Hepatitis delta virus is only infective in the presence of Hepatitis B virus
 - d) Maintain and synthesise proteins for viral assembly
23. The polio virus is transmitted through
- a) Respiratory droplets
 - b) Contact with body fluids
 - c) Vector transmission
 - d) Faecal oral transmission
24. A virus can be described as-
- a) A unicellular microorganism lifeless on its own
 - b) An enveloped parasitic organism
 - c) An obligate intracellular DNA and RNA parasite
 - d) An obligate parasite which can led an independent life
24. Which of the following viral infections is spread by mosquitoes
- a) Rift valley fever
 - b) Ebola virus
 - c) HIV viruses
 - d) Hepatitis B viruses
25. Viral symmetry is attributed to -----
- a) Viral envelop
 - b) Viral genome
 - c) Viral Capsid
 - d) Viral Peplomers
26. The mode through which bacteriophage penetrate their host is
- a) Pinocytosis
 - b) Phagocytosis
 - c) Direct infection by viral genome
 - d) Viropexia
27. The following are classes of interferon except
- a) α - interferon
 - b) β - interferon

- c) Gamma- interferon
 - d) Lambda- interferon
28. Viral oncogenes are
- a) Malignancy inducing genes
 - b) Viruses responsible for skin infections
 - c) Viruses that code for viral Capsid proteins
 - d) Cause high infection in latent face
29. Which of the following are Double stranded DNA viruses?
- a) Small pox
 - b) Dane particles
 - c) JC viruses
 - d) Rotaviruses
30. Innate immunity consists of the following except
- a) Body temperatures
 - b) Mucocillia and skin
 - c) Immunoglobulins
 - d) Natural killer cells
31. In the laboratory, microbes may get to the body through
- a) Scratched skin
 - b) Eyes
 - c) Eating
 - d) All of the above
32. Which of the following if true of microbes in risk group IV?
- a) They include encephalitis viruses
 - b) They include arthropod borne viruses
 - c) They cause serious diseases
 - d) All of the above.
33. Which of the following cells are the primary target for HIV?
- a) T_h cells
 - b) Intestinal epithelium
 - c) Antigen presenting cells
 - d) Brain cells
34. Viruses may be classified on the basis of the following except
- a) Nucleic acid strand
 - b) mRNA production
 - c) Protein synthesis
 - d) Number of capsomers
35. The following would be MOST resistant to UV light
- a) RNA
 - b) Delta viruses
 - c) DNA
 - d) Prions

36. Viral pathology is mostly attributed to
- a) Bacterial co-infection
 - b) Viral replication processes
 - c) Accumulation of viral toxins
 - d) Immune molecules activity
37. The largest virus measures about----- in diameter
- a) 400m
 - b) 400 nm
 - c) 400 mm
 - d) 400 cm
38. Which of the following takes place at the biosynthetic replicative step of viruses
- a) The viral nucleic acid is degraded into smaller fragments
 - b) Transcription of mRNA takes place
 - c) Bacteriophage nucleic acid is taken into the nucleus.
 - d) Viral proteins may be produced
39. The following statements are true about naked viruses except
- a) Released by lysis of host cells
 - b) Can sustain in dry environment
 - c) Can spread easily via hands, dust, fomites
 - d) Damaged by drying, acid, detergent, and heat
40. What is the final step before virion release in naked viruses
- a) Synthesis of late viral proteins
 - b) Viral genome replication
 - c) Viral budding processes
 - d) Viral assembling processes

Section B

41. Classify the viruses using the following -

- a) Taxonomical system (6mks)
- b) Structural properties (6mks)
- c) Baltimore classification system (8mks)

42. Discuss the various routes of viral transmission citing two relevant examples under each route (20mks)

43. a) Outline the differences between the killed and live attenuated vaccines (10mks)

b) Draw well labelled illustrations of enveloped and naked virus (10mks)