TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF MEDICAL SCIENCES

UNIVERSITY EXAMINATION FOR:

DMLS

AML 2203 : MEDICAL VIROLOGY 1

SPECIAL/ SUPPLIMENTARY EXAMINATIONS

SERIES: SEPTEMBER 2018

TIME: 2 HOURS

DATE: Pick Date Sep 2018

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.

1) The eclipse period is a
   a) Period between uncoating and the formation of the first progeny virus
   b) Period between onset of infection and the appearance of the first extracellular virus
   c) Period when viruses are scarce extracellularly but in abundance intracellularly
   d) Period during which signs and symptoms of disease are manifested

2. Burkitt lymphoma is caused by
   a) Epstein-Barr virus
   b) Herpes simplex virus
   c) HIV
   d) Hepatitis A virus

3. Which of the virus below undergoes latency
   a) Hepatits B virus
   b) Herpes simplex virus
   c) HIV

d) Polio virus

4. Monkeys act as the reservoir host of the following except
   a) HIV
   b) Ebola
   c) Marburg
   d) Rabies

5. Spread or outbreak of a viral infection in a community is termed an
   a) Epidemic
   b) Pandemic
   c) Endemic
   d) Sporadic

6. Rhinoviruses causes
   a) Haemorrhagic fever
   b) Gastroenteritis
   c) Common cold
   d) Mouth sores

7. The ability of a virus to replicate in a particular cell is controlled by
   a) Host proteins
   b) Virus attachment proteins
   c) Viral capsid
   d) Viral genome

8. Which of the following is not a live attenuated vaccine?
   a) Measles vaccine
   b) Polio salk vaccine
   c) Hepatitis A vaccine
   d) Yellow fever vaccine

9. The classical receptor site for gp 120 is
   a) CD3 marker
   b) CD4 marker
   c) CD8 marker
   d) CD2 marker

10. The most causative agent of common cold is
   a) Type A influenza viruses
   b) Adeno viruses
   c) Rota viruses

d) Rhino viruses

11. Yellow fever viruses and Dengue haemorrhagic fever viruses are found in the family;
    a) Paramyxoviridae
    b) Coronaviridae
    c) Bunyaviridae
    d) Flaviviridae

12. Which proteins of the virus induce protective antibody
    a) Core protein s
    b) Genome proteins
    c) Enzyme proteins
    d) Surface proteins

13. Genome replication in Hepatitis B viruses involves
    a) DNA dependent RNA polymerase
    b) DNA dependent DNA polymerase
    c) RNA dependent DNA polymerase
    d) RNA dependent RNA polymerase

14. Viral host cell specificity is a function of
    a) Viral surface receptors
    b) Viral genome
    c) Viral polymerase
    d) Viral nucleic acid

15. Which of the virus below is acid labile
    a) Echo viruses
    b) Polio viruses
    c) Rhino viruses
    d) Hepatitis A viruses

16. The following polio vaccines induce production of IgA
    a) Salk
    b) Sabine
    c) None of them
    d) All of them

17. The following are enveloped except
    a) Hepatitis A virus
    b) Hepatitis B virus
    c) Hepatitis C virus
    d) Hepatitis D virus

18. The largest virus may be about
    a) 30 nm
    b) 300 nm
    c) 20 nm
    d) 200 nm

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

20. Reverse transcriptase is a useful enzyme to have when
    a) an RNA virus converts its RNA to DNA
    b) there are no host cells present
    c) nutrients are scarce
    d) spikes are forming in the new virus

21. The following are characteristics of viruses except
    a) They have cellular organizations
    b) They have nucleic acids in them
    c) They may have only one type of nucleic acid in them
    d) They have transcriptase enzymes

22. Which of the following is most likely to inactivate viruses?
    a) Exposure to UV light for about 2 minutes
    b) Exposure to heat at $60^{o}C$ for about 3 minutes
    c) Exposure to glycerol for about two weeks
    d) Exposure to dyes and visible light

23. The following are shapes of viruses except
    a) Spherical shape
    b) Head and tail
    c) ring shape
    d) Rod shape

24. An example of brick shaped virus is
    a) Small pox
    b) Influenza
    c) rabbis
    d) Bacteriophage T4

25. When was AIDS first recognized as representing a new disease?
    a) 1971
    b) 1973
    c) 1981
    d) 1983

26. The viruses in an attenuated vaccine
    a) have no genome
    b) continue to replicate
    c) are usually larger than bacteria
    d) is altered with chemicals

27. The following statements are true about viral multiplication except
    a) May lead to cell death
    b) Occurs only in living cells
    c) May lead to synthesis of toxins.
    d) May take place without apparent host cell damage

28. Which of the following are true about viral adsorption?
    a) The receptors confer specificity
    b) Its occurs after viral entry into host cell
    c) The viral nucleic acid is released
    d) It is enhanced by host enzymes

30. Apart from direct cell-to-cell contact, the virus may spread in the body system via
    a) Ingestion
    b) Inhalation
    c) Central nervous system
    d) Body contact

31. Which of the following are DNA viruses?
    a) Hepadna viruses
    b) flavi viruses
    c) Retroviruses
    d) Picornaviruses

32. Which of the following viral diseases are most likely to be characterized by skin lesions
    a) Polio viruses
    b) Rabies viruses
    c) Measles
    d) Rotavirus

33 In order for a virus to replicate

a) the capsid must enter the host cell cytoplasm
b) the host cell must be undergoing mitosis
c) the genome must be released in the cytoplasm
d) the host cell must lack a cell membrane

34. Edward Jenner began inoculating humans with material from _____ lesions.

a) Smallpox
b) Avian pox
c) Cowpox
d) Chickenpox

35. Which of following may be ways to protect oneself from infections in the laboratory?

a) Covering scratches with adhesive plasters
b) Refraining from eating in the laboratory
c) Washing hands after going to the toilet
d) All the above

36. Which of the following cells can be infected by HIV?

a) T_c cells
b) Intestinal epithelium
c) Antigen presenting cells
d) Brain cells

36. HIV is in which hazard group of viruses

a) Group 1
b) Group 2
c) Group 3
d) Group 4

37. Which virus below can be transmitted through breastfeeding

a) Cytomegalovirus
b) Hepatitis C virus
c) Herpes simplex 2 virus
d) Polio virus

38. Viruses largely lack metabolic machinery of their own to generate energy or to synthesize

a) Protein
b) Carbohydrate
c) Alcohol
d) all of these

39. An example of a killed vaccine is?

a) MMR vaccine
b) Hepatitis B vaccine
c) Hepatitis A vaccine
d) Influenza vaccine

40. MMR in virology stands for

a) Measles, Mumps, Rubella
b) Measles, Mumps, rhinoritis
c) Measles, Mycobacteria, Rubella
d) Mononucleosis, Measles, Mumps

Section B

1. (a) i) Draw and label the viral growth curve (3marks)
ii) How long does an animal virus take to complete their replication compared to bacterial viruses. (2marks)
(b) Name five disadvantages of inactivated vaccines (5marks)
(c) Explain the viral transmission routes citing relevant examples (10marks)

2. (a) Explain how the following affects viruses (8marks)
i) Ether
ii) Magnessium sulphate
iii) Temparature
iv) Glycerol
(b) Describe three effects of interactions among viruses (6marks)
(c) Describe the three steps involved in viral pathogenesis (6marks)

3. a) Outline the viral replication steps (10mks)
b) Discuss five interactions seen when a host cell is infected by 2 or more virus particles (10mks)