



**TECHNICAL UNIVERSITY OF MOMBASA**

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FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF MEDICAL SCIENCES

**UNIVERSITY EXAMINATION FOR:**

DMLS

AML 2305 : MEDICAL VIROLOGY 11

END OF SEMESTER EXAMINATION

**SERIES: DECEMBER 2016**

**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.**

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**SECTION A**

1. To limit bacterial contamination, all samples for virology analysis should be-----
  - a) Collected on time
  - b) Collected aseptically
  - c) Collected after the appearance of the symptoms
  - d) Transported in viral transport media
  
2. Paired sera are necessary to detect
  - a) Decrease in the antibody titre
  - b) Increase in the antibody titre
  - c) Increase in the antigen titre
  - d) Decrease in the antibody titre
  
3. Which of the following samples is considered satisfactory for isolation of influenza viruses?
  - a) Peri-nasal swab
  - b) Throat swab
  - c) Nasopharyngeal secretion

d) Sputum

4. Viral specimen on transit should be kept at what temperature

- a) 37<sup>o</sup>c
- b) -70<sup>o</sup>c
- c) 4<sup>o</sup>c
- d) 2<sup>o</sup>c

5. A single serum sample is required in virology when testing for-----

- a) Measles
- b) Hepatitis D virus
- c) HIV
- d) Cytomegalovirus

6. The following information should be availed when labelling the samples except

- a) Patient's name and number.
- b) Hospital or health centre.
- c) Type of specimen.
- d) Container tops code

7. Which statement is true about blood specimen for antibody testing in viral infections?

- a) Should be analysed immediately after collection
- b) Should be collected in anticoagulated vacutainers
- c) Should be collected in the chronic stages of the disease as possible
- d) Two sera specimen are necessary to detect the rise in the antibody titre

8. Which of the following is not a constituent of viral transport media?

- a) Buffered isotonic sodium chloride
- b) Antiviral agents
- c) Antifungal agents
- d) Antibiotics

9. Which of the following virus forms intranuclear inclusions?

- a) Rabies
- b) Ebola virus
- c) Varicella zoster virus
- d) Influenza virus

10. The intracytoplasmic inclusions of rabies virus are known as

- a) LD bodies
- b) Negri bodies
- c) Guarneri bodies

d) None of the above

11. Which of the following is not an example of a molecular diagnostic method?

- a) NASBA
- b) TMA
- c) ELISA
- d) RT-PCR

12. Which of the following is not a direct method of specimen examination?

- a) Detection of IgM using immunofluorescence technique
- b) Detection of antigen using immunofluorescence technique
- c) Light microscopy for histological appearance
- d) Molecular techniques for genome analysis

13. Which of the following is an example of a cell culture?

- a) Explants
- b) Animal cell culture
- c) Secondary cell culture
- d) Continuous cell culture

14. Which virus will grow in the amniotic sac of embryonated eggs?

- a) Mumps
- b) Herpes simplex
- c) Paramyxovirus
- d) Pox virus

15. Which group of the Influenza virus causes pandemics, epidemics and has an avian intermediate host

- a) Group A
- b) Group B
- c) Group C
- d) Group D

16. Eye infections characterized by swimming pool conjunctivitis is caused by?

- a) Measles virus
- b) Adenovirus
- c) Cytomegalovirus
- d) Mumps

17. German measles is caused by?

- a) Adenovirus
- b) Measles virus
- c) Rubella virus

d) Mumps virus

18. MMR vaccine is live attenuated vaccine against?

- a) Mycobacterium tuberculosis
- b) Influenza virus
- c) Rubella virus
- d) Mumps virus

19. Kopliks spots is a disease presentation of which viral disease

- a) Measles
- b) Rabies
- c) Human papilloma
- d) Small pox

20. Burkitt's lymphoma is caused by?

- a) Epstein barr virus
- b) Herpes zoster virus
- c) Human parvovirus
- d) Cytomegalovirus

21. The presence of heterophile antibodies is associated with

- a) Hepadnavirus
- b) Herpes simplex virus
- c) Papovavirus
- d) Pox virus

22. Owl's eye inclusion in cells is a feature of

- a) Cytomegalovirus
- b) Parvovirus
- c) Adenovirus
- d) Human papilloma virus

23. Which of the following diseases can be described as zoonotic

- a) Rotavirus
- b) Measles
- c) Respiratory syncytial virus
- d) Rabies

24. Which viral infection below can be classified as a laboratory acquired infection?

- a) Human papilloma virus
- b) Yellow fever
- c) Hepatitis B

d) Rabies

25. The genome of Rotavirus is-----?

- a) Single stranded RNA
- b) Double stranded segmented RNA
- c) Single stranded DNA
- d) Double stranded DNA

26. Which of the virus below is found in the gut as an opportunistic organism?

- a) Cytomegalovirus
- b) Hepatitis A virus
- c) Rotavirus
- d) Adenovirus

27. Which of the following virus is transmitted via blood?

- a) Rubella virus
- b) Measles virus
- c) Hepatitis C virus
- d) Small pox virus

28. Which of the following is not a type of Ebola virus?

- a) Ebola zaire
- b) Ebola Venezuela
- c) Ebola sudan
- d) Ebola ivory coast

29. Which of the following is an arbovirus?

- a) Corona virus
- b) Marburg virus
- c) Rabies virus
- d) HIV

30. Viruses can be visualized directly from the cerebrospinal fluid by-----?

- a) Fluorescence microscopy
- b) Electron microscopy
- c) Dark field microscopy
- d) Negative staining

31. Which vector is involved in the transmission of Rift valley fever?

- a) Ticks
- b) Fleas
- c) Mosquitoes

d) Bedbugs

32. Which virus below is transmitted sexually?

- a) Genital warts
- b) Hepatitis B
- c) Polio
- d) Rotavirus

33. The following viruses are transmitted through faecal oral routes except?

- a) Hepatitis A
- b) Hepatitis C
- c) Hepatitis B
- d) Dengue

34. Which virus below has subtypes that can be transmitted via droplet contact and faecal oral routes?

- a) Cytomegalovirus
- b) Herpes simplex virus
- c) Adenovirus
- d) Influenza virus

36. Cancer of glandular epithelial tissues is caused by which family of viruses?

- a) Poxviridae
- b) Adenoviridae
- c) Herpesviridae
- d) Hepadnaviridae

37. Which family of viruses is associated with cervical cancer?

- a) Poxviridae
- b) Adenoviridae
- c) Papovaviridae
- d) Hepadnaviridae

38. Which family of viruses is not associated with viral hemorrhagic fevers?

- a) Arenaviridae
- b) Filoviridae
- c) Flaviviridae
- d) Togaviridae

39. Zika virus is transmitted by which vector?

- a) Sandflies
- b) Mosquitoes
- c) Tsetse flies

d) Ticks

40. The growth of virus in the cell culture can be detected by the following methods except

- a) Precipitation
- b) Cytoplasmic effect
- c) Metabolic inhibitors
- d) Transformation

#### SECTION B

41. Citing relevant examples discuss ten transmission routes of viruses (20mks)

42. Discuss the following

- i. direct methods of specimen analysis (10mks)
- ii. Isolation of viruses (10mks)

43. Discuss the FOLLOWING citing relevant examples where applicable

- i. Safety in a clinical laboratory (6mks)
- ii. Laboratory acquired viral infections (6mks)
- iii. Classification of pathogens into hazard groups (8mks)