



**MASINDE MULIRO UNIVERSITY OF
SCIENCE AND TECHNOLOGY
(MMUST)**

MAIN CAMPUS

UNIVERSITY EXAMINATIONS

2019/2020 ACADEMIC YEAR

**THIRD YEAR, SECOND SEMESTER EXAMINATIONS
FOR THE DEGREE
OF
BACHELOR OF MEDICAL LABORATORY SCIENCE**

COURSE CODE: BML 324

COURSE TITLE: DIAGNOSTIC VIROLOGY

MAIN EXAMINATION

DATE: 7TH DECEMBER 2020

TIME: 2.00 -4.00PM

INSTRUCTIONS TO CANDIDATES

Instructions to Candidates
Answer All Questions

Section A: Multiple Choice Questions (MCQ)	20 Marks.
Section B: Short Answer Questions (SAQ)	40 Marks.
Section C: Long Answer Question (LAQ)	60 Marks

TIME: 2Hours

MMUST observes ZERO tolerance to examination cheating

1. Which one of the listed viruses have positive strand which becomes converted into DNA and integrated into the host cellular DNA during their replication process
 - a) Rhinoviruses
 - b) Enteroviruses
 - c) Retroviruses
 - d) Reoviruses
2. Infants infected with cytomegaloviruses (CMV) in utero may suffer from one of the following conditions
 - a) mental retardation
 - b) enlarged kidney
 - c) Hemorrhage
 - d) Meningitis
3. The human virus that has been associated with Burkett's lymphoma (a malignant tumor of the jaw) is known as.....
 - a) Cytomegalovirus
 - b) Human papilloma virus (HPV)
 - c) Retroviruses
 - d) Epstein- Barr virus
4. Which one of the following represent viruses that contain two complete copies of positive strand RNA and the enzyme reverse transcriptase
 - a) Toga viruses
 - b) Rhabdoviruses
 - c) Retroviruses
 - d) Reoviruses
5. Which one of the following is NOT a cytopathic effect?
 - a) transformation
 - b) cell fusion
 - c) mononucleated cell
 - d) inclusion bodies
6. Which one of the following viruses is not associated with acute bronchitis
 - a) Parainfluenza virus
 - b) Respiratory syncytial virus
 - c) Adenoviruses
 - d) Calciviruses
7. Which one of the following is a preservative used for blood specimens in virological work
 - a) Skimmed milk
 - b) Phosphate buffer
 - c) Balanced salt solution
 - d) Distilled water
8. Which one of the following virus is not an oncogenic virus
 - a) Human Papilloma virus
 - b) Herpes simplex virus
 - c) Hepatitis virus
 - d) Adeno virus
9. Which one of the following viruses are known to remain latent (usually in neurons) for many years
 - a) Herpesviruses
 - b) Enteroviruses
 - c) Rhinoviruses
 - d) Retroviruses
10. A type of cell culture that can reproduce for an extended number of generations and is used to support viral replication is known as.....
 - a) Primary cell culture
 - b) Continuous cell line
 - c) Cell strain
 - d) Diploid fibroblast cell
11. Which one of the following mainly explains the difference between Enteroviruses and rhinoviruses
 - a) Size
 - b) Capsid shape
 - c) Ability to survive acidic conditions

- d) Strandedness
12. Below are laboratory tests performed in diagnosis of hepatitis B. which positive test is indicative of high infectivity in a chronic carrier of the disease?
 - a) Hepatitis B Surface Antigen (HbsAg)
 - b) Hepatitis B Core Antigen (HbcAg)
 - c) Hepatitis B envelope Antigen (HbeAg)
 - d) Anti-HBsAg
 13. Which one of the following does not describe the pathogenesis of Hepatitis B virus
 - a) Hepatocellular injury is caused by immune attack by cytotoxic (CD8) T cells.
 - b) HBV infection in the brain appears to be largely restricted to macrophages, which may indirectly damage neuronal tissue by releasing neurotoxic factors or factors that induce inflammation
 - c) Its infection primarily interferes with the functions of the liver by replicating in the liver cells
 - d) The virus gains entry into the cell by binding on the surface and being endocytosed
 14. Which one of the following infection routes is most often involved in the neonatal transmission of hepatitis B virus (HBV)?
 - a) Blood transfusion
 - b) Fetal contact with infected blood during childbirth
 - c) Ingestion of the virus via maternal breast milk
 - d) Transmission of the virus from hospital personnel during childbirth
 15. Which of the following is not an RNA virus?
 - a) Retrovirus
 - b) Enterovirus
 - c) Rhabdovirus
 - d) Adenovirus
 16. Which one of the following is the major cause of infantile diarrhea
 - a) Coxsackie virus
 - b) Rota virus
 - c) Hepatitis A virus
 - d) Rabies virus
 17. Which one of the following virus multiplies in the grey matter of the brain
 - a) Measles virus
 - b) Rabies virus
 - c) Mumps virus
 - d) Rhinovirus
 18. Which one of the following is a major cause of cervical cancer in women?
 - a) Human herpes virus
 - b) Human papilloma virus
 - c) Hepatitis C virus
 - d) Epstein Barr virus
 19. Which one of the following viruses does not establish a latent infections
 - a) Measles virus
 - b) Herpes simplex virus
 - c) Varicella zoster virus
 - d) Cytomegalovirus
 20. The common test used for screening Human papilloma virus is.....
 - a) Polymerase chain reaction
 - b) ELISA test
 - c) Pap smear
 - d) Culturing

Section B: Short Answer Questions (SAQ)

40 Marks.

1. List three requirements which must be satisfied to ensure successful infection in an individual host (3mks)
2. Describe the following (3mks)
 - a) "Window period"
 - b) Viral inclusion bodies
 - c) Principle of Immunoassay test
3. Explain variety of ways in which multiplication of a virus can be monitored in virus-infected cells. (4mks)
4. Explain the clinical disease of Mumps Viruses and the associated complications (4mks).
5. Describe the congenital Rubella virus infection (4mks)

6. List 4 characteristics of an ideal viral transport medium (4marks)
7. Outline the general properties of Poxviruses (4mks)
8. Describe the structure of Hepatitis B virus (4mks)
9. Explain the different routes of viral inoculation into the animal. (4marks).
10. Describe the three major steps in a Polymerase Chain Reaction (6mks)

Section B: Long Answer Questions (LAQ)

40 Marks

1. Rabies is an acute infection of the central nervous system that is always fatal. Discuss the disease' transmission, Pathogenesis, clinical manifestations, Lab diagnosis, Prevention and control. (20mks)
2. Discuss the human immunodeficiency virus by describing the structure, clinical manifestations laboratory diagnoses and the disease therapy (20marks)
3. ELISA tests are broken into types of tests based on how the analytes and antibodies are bonded and used. Discuss the four ELISA formats (20mks)