



**AMREF INTERNATIONAL UNIVERSITY
SCHOOL OF MEDICAL SCIENCES
DEPARTMENT OF NURSING & MIDWIFERY SCIENCES
END OF SEMESTER MAY AUGUST 2025 EXAMINATIONS**

COURSE CODE AND TITLE: BSN 125: Medical Parasitology And Virology

DATE: Tuesday 12th August 2025

Duration: 2 HOURS Start: 900AM Finish: 1100AM

INSTRUCTIONS

1. This exam is out of 70 marks.
2. This Examination comprises THREE Sections. Section I: Multiple Choice Questions (20 marks). Section II: Short Answer Questions (30 marks) and Section III: Long Answer Questions (20 marks).
3. Answer ALL Questions.
4. Do NOT write anything on the question paper - use the back of your booklet for rough work if need be.

SECTION I: MULTIPLE CHOICE QUESTIONS (MCOs)

(20 MARKS)

1. The chronic infection of one of the following hemoflagellates is associated with megaesophagus or megacolon: -
 - A. *Trypanosoma brucei*
 - B. *Trypanosoma cruzi*
 - C. *Leishmania donovani*
 - D. *Leishmania tropica*

2. The following statement concerning Kala-azar is correct is: -
 - A. It is caused by *Trypanosoma brucei*
 - B. It is transmitted by the bite of Glossina
 - C. It occurs primarily in rural Latin America
 - D. It can be diagnosed by finding amastigotes in bone marrow

3. Humans can be both the intermediate host and the definitive host for: -
 - A. *Taenia solium*
 - B. *Echinococcus granulosus*
 - C. *Diphyllobothrium latum*
 - D. *Taenia saginata*

4. The protozoan associated with severe diarrhea in immunocompromised individuals is: -
 - A. *Toxoplasma gondii*
 - B. *Cryptosporidium parvum*
 - C. *Trichomonas vaginalis*
 - D. *Plasmodium falciparum*

5. Loeffler's syndrome is associated with: -
 - A. common roundworm
 - B. threadworm
 - C. guinea worm
 - D. hookworm

6. A barrel-shaped, yellow brown egg that is 50-52 μm long with prominent, clear mucoid 'plug' at both ends is suggestive of: -
 - A. *Enterobius vermicularis*
 - B. *Ascaris lumbricoides*
 - C. *Trichuris trichura*
 - D. *Hymenolepis nana*

7. A patient came to the hospital with the following symptoms: pneumonitis, persistent cough with blood-stained sputum. The infection that the patient is most likely suffering from is: -
 - A. *Ancylostoma duodenale*
 - B. *Trichuris trichiura*
 - C. *Paragonimus westermanii*
 - D. *Diphyllobothrium latum*

8. The parasite that is most likely transmitted by ingestion of food or water contaminated with feces is: -
 - A. *Ascaris lumbricoides*
 - B. *Enterobius vermicularis*
 - C. *Necator americanus*
 - D. *Taenia saginata*

9. A helminth that is naturally transmitted by ingestion of pork, bear, or walrus meat could be detected in: -
- A. Duodenal contents
 - B. Blood
 - C. Biopsied muscle
 - D. Sputum
10. A renal transplant patient was admitted for graft rejection and pneumonia. A routine evaluation of his stool showed rhabditiform larvae. Subsequent follow-up revealed similar worms in his sputum. He had no eosinophils in his peripheral circulation. The most likely organism is: -
- A. *Necator americanus*
 - B. *Hymenolepis nana*
 - C. *Ascaris lumbricoides*
 - D. *Loa loa*
11. The parasite with microfilaria that typically display diurnal periodicity is: -
- A. *Loa loa*
 - B. *Brugia malayi*
 - C. *Mansonella perstans*
 - D. *Onchocerca volvulus*
12. The Baltimore virus classification system that the Retroviruses belong to is: -
- A. Group 3
 - B. Group 7
 - C. Group 5
 - D. Group 6
13. The characteristic that Hepatitis A and E viruses share is: -
- A. They both cause chronic diseases
 - B. Both are transmitted via fecal-oral route
 - C. Both cause hepatocellular carcinoma
 - D. Both are transmitted via blood transfusion
14. The finding of large, multinucleated, clumps of cells in the bronchial secretions of a 2 year old girl with acute bronchopneumonia suggests that this infection is caused by: -
- A. Epstein – Barr virus
 - B. *Mycoplasma hominis*
 - C. Rhinovirus
 - D. Respiratory syncytial virus (RSV)
15. The true statement regarding human papilloma virus (HPV) is: -
- A. There is no vaccine available against HPV
 - B. Acyclovir is effective in preventing lesions caused by HPV
 - C. The early proteins of HPV play a more important role in malignant transformation than the late proteins
 - D. Antigen-antibody complexes play an important role in the pathogenesis of the warts caused by HPV
16. The most accurate regarding parvovirus B19 is: -
- A. vaccine is available that contains killed virus as the immunogen
 - B. Patients infected by parvovirus B19 can be diagnosed in the laboratory using the cold agglutinin test

- C. Parvovirus B19 causes severe anemia because it preferentially infects erythrocyte precursors such as erythroblasts
- D. Parvovirus B19 commonly infects neutrophils, resulting in an immunodeficiency that predisposes to pyogenic bacterial infections

17. The most accurate regarding the rabies virus and the rabies disease is: -

- A. Finding intraclear inclusion bodies within macrophages is presumptive evidence of rabies virus infection
- B. Lamivudine is used to treat rabies because it inhibits the RNA-dependent DNA polymerase in the virion
- C. The incubation period of the disease is usually 2 to 4 days
- D. After the animal bite, rabies virus enters the bloodstream, replicates in internal organs such the liver, then reaches the central nervous system during secondary viremia

18. The kind of vaccine that is used for measles and mumps is: -

- A. Inactivated
- B. Toxoid
- C. Live attenuated
- D. Subunit

19. An example of an arbovirus (arthropod-borne virus) is: -

- A. Rabies virus
- B. Dengue virus
- C. Hepatitis A virus
- D. Norovirus

20. A common, highly diagnostic sign of measles is: -

- A. Viremia
- B. Sore throat
- C. Red rash
- D. Koplik's spots

SECTION II: SHORT ANSWER QUESTIONS (SAQs)

(30 MARKS)

1. A 49-year-old female visited X County Referral Hospital presenting with hepatic pain, jaundice, cough, hemoptysis, and seizures. Liver CT scan shows abnormal swellings. The patient is a pastoralist rearing livestock and dogs.
 - a) The likely parasite that the patient was suffering from is: - (1 Mark)
 - b) Describe the life cycle and outline the treatment and prevention of the parasites. (5 marks)
2. A 35-year-old male presents with multiple symptoms: a papulovesicular pruritic rash and itch on the foot, diarrhea, pleuritic pain, and hemoptysis. A stool stain showed presence of larvae. History taken shows that he has no toilet and running water.
 - a) The likely parasite that the patient was suffering from is: - (1 mark)
 - b) Describe the life cycle of this parasite outlining its multiple transmission methods.(5 marks)
3. Compare and contrast between pinworms and hookworms. (6 marks)
4. Concerning Influenza virus:
 - a) Distinguish between antigenic drift and antigenic shift as it pertains to pathogenesis. (1 mark)

b) Discuss the life cycle of Influenza virus from entry to exit. (5 mark)

5. Write short notes on Hepatitis B virus (HBV) under the following sub-headings:

a) Transmission. (2 mark)

b) Pathogenesis and clinical manifestation. (2 marks)

c) HBV antibody immune response. (2 marks)

SECTION III: LONG ANSWER QUESTIONS (LAQs)

(20 MARKS)

1. Herpesviruses are neurotropic viruses that cause both acute and latent infections.

a) Discuss the classification of Herpesviruses. (4 marks)

b) Discuss the characteristics, classification, and replication strategies of herpesviruses. (8 marks)

c) Compare the two types of human herpes simplex virus according to the types of diseases they cause, body areas affected, and complications (8 marks)

ANSWER