



"Investing in Africa's Future"

COLLEGE OF HEALTH, AGRICULTURE & NATURAL SCIENCES
DEPARTMENT OF BIOMEDICAL AND LABORATORY SCIENCES
BACHELOR OF MEDICAL LABORATORY SCIENCES HONOURS

NSLS 206 PARASITOLOGY, MYCOLOGY, VIROLOGY
END OF SEMESTER EXAMINATIONS

APRIL 2026

LECTURER: Dr S L Mutambu

DURATION: 3 HOURS

INSTRUCTIONS

1. Write your candidate number on the space provided on top of each page
2. Answer **all** questions in sections A on the question paper.
3. Answer **all** questions in section B on separate answer sheets provided.
4. Answer any **3** questions in section C on separate answer sheets provided
5. The mark allocation for each question is indicated at the end of the question
6. Credit will be given for logical, systematic and neat presentations in sections B and C

SECTION A

TRUE (T) OR FALSE (F) QUESTIONS [20 MARKS]

Answer **all questions** by indicating in the bracket [], T for **TRUE** or F for **FALSE** for each statement in all the questions. Each correct response is allocated a quarter mark.

1. Definitive host is one in which:

- a. sexual multiplication takes place and harbours adult form. []
- b. asexual multiplication takes place and harbours adult form. []
- c. sexual multiplication takes place and harbours larval form. []
- d. asexual multiplication takes place and harbours adult form. []

2. The following are RNA viruses:

- a. Retrovirus []
- b. Rhabdovirus []
- c. Adenovirus []
- d. Rubellavirus []

3. *Rhizopus*:

- a. species are common agents of mucormycosis in immuno-compromised patients. []
- b. produces rhizoids directly beneath sporangiophores. []
- c. infections can cause rhinocerebral, pulmonary, and disseminated disease. []
- d. invasive infections can be treated by Amphotericin B which is the drug of choice. []

4. Vector for *Trypanosoma cruzi* is a:

- a. hard tick. []
- b. reduviid bug []
- c. sandfly []
- d. tsetse fly []

5. *Mucor* species:

- a. lack rhizoids. []
- b. is a slow-growing mold. []
- c. can cause mucormycosis in immunocompromised patients. []
- d. though less common than *Rhizopus*, it is pathogenic. []

6. The pathological changes in Schistosomiasis are caused mainly by:

- a. Adult worms. []
- b. Metacercariae []
- c. Mature eggs. []
- d. Cercariae. []

7. The following Protozoan parasites cause diarrhoea:

- a. *Giardia lamblia* []
- b. *Entamoeba histolytica* []
- c. *Cyclospora cayetanensis* []
- d. *Cryptosporidium parvum* []

8. *Wuchereria bancrofti*:

- a. is an amoeboid parasite which is common in Europe. []
- b. is transmitted by mosquitoes, primarily *Culex* species. []
- c. chronic lymphatic obstruction leads to massive swelling of limbs and genitalia. []

- d. microfilariae circulate in peripheral blood at night, synchronized with mosquito feeding habits. []

9. *Fasciola hepatica*:

- a. causes hepatic fascioliasis. []
b. is acquired via aquatic vegetation (e.g., watercress). []
c. adult worms reside in bile ducts, not lungs. []
d. intermediate hosts are snails. []

10. The following organisms are dermatophytes:

- a. *Trychophyton*. []
b. *Microsporum*. []
c. *Epidermophyton*. []
d. *Cryptococcus*. []

11. *Schistosoma haematobium*:

- a. causes urinary schistosomiasis. []
b. eggs have a lateral spine. []
c. common symptom is haematuria. []
d. cercariae penetrate the skin during water contact. []

12. *Penicillium*:

- a. species are common environmental molds. []
b. is the source of the antibiotic penicillin. []
c. species are a major cause of invasive fungal infections. []
d. species are responsible for a lot of fungal deaths in Africa. []

13. Viruses:

- a. are inert nucleoprotein filterable agents []
b. are obligate intracellular parasites []
c. cannot make energy or proteins independent of a host cell []
d. contain a viral genome which is RNA or DNA but not both []

14. Host-parasite relationships are of the following types:

- a. Symbiosis []
b. Saprophytic []
c. Commensalism []
d. Parasitism []

15. The following organisms are Nematodes:

- a. *Onchocerca volvulus*. []
b. *Wuchereria bancrofti*. []
c. *Brugia malayi*. []
d. *Necator americanus*. []

16. *Trichomonas vaginalis*:

- a. is transmitted primarily through sexual contact. []
b. infection can cause vaginitis with frothy discharge. []
c. carriers are more often men than women. []

d. forms cysts that survive outside the host. []

17. The following are soil transmitted worms:

- a. *Trichuris trichiura*. []
- b. *Trichinella spiralis*. []
- c. *Ancylostoma duodenale*. []
- d. *Ascaris lumbricoides*. []

18. These techniques can be readily used to count bacteriophages:

- a. Immunoassays []
- b. Plaque assays []
- c. Tissue cell culture []
- d. Electron microscopy []

19. *Toxoplasma gondii*:

- a. definitive host is the cat. []
- b. is acquired through undercooked meat containing tissue cysts. []
- c. infection can cause congenital toxoplasmosis []
- d. parasite reproduces sexually in humans. []

20. The infective form of the malaria parasite is:

- a. Oocyst []
- b. Sporozoite []
- c. Bradyzoite []
- d. Tachyzoite []

SECTION B

SHORT ANSWER QUESTIONS [20 MARKS]

Answer all questions in this section

1. Name four (4) different systemic protozoans and name the disease caused by each. (8 marks)
2. List the names of four (4) pathogenic fungi and the disease caused by each. (8 marks)
3. Name four (4) parts of a virus. (4 marks)

SECTION C

LONG ESSAY QUESTIONS [60 MARKS]

Answer any 3 questions from this section on separate answer sheets provided.

1. Draw and describe the physical features that are used to identify fungi of medical importance. (20 marks)
2. Give a detailed account of the different stages in the life cycle of a named phage virus. (20 marks)
3. “Arthropods play a very important role in the transmission of human diseases of public importance”. Discuss this statement in detail giving examples of arthropods and diseases caused. (20 marks)
4. Draw and describe how the medically important helminth parasites are taxonomically classified giving at least one example of each genus. (20 marks)
5. Compare and contrast the life cycles of *Trypanosoma brucei* and *Plasmodium falciparum*. (20 marks)

END