"Investing in Africa's Future"

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

SLS 206 PARASITOLOGY, MYCOLOGY & VIROLOGY THEORY EXAMINATION
END OF FIRST SEMESTER EXAMINATIONS

NOVEMBER 2018

LECTURER: E. MUGOMERI

DURATION: 3 HOURS

INSTRUCTIONS

The paper comprises of three sections (A, B and C).

Section A (40 marks)
Answer all questions in this section.
Circle the correct answer
Each correct answer (whether **True (T)** or **False (F)** carries ¼ mark.
Section B (20 marks)
Answer all questions in this section.
Section C (60 marks)
Choose **three** questions. The whole section is out of 60.
Credit will be given for logical, systematic and neat presentations.

SECTION A: TRUE (T) OR FALSE (F) QUESTIONS [40 MARKS]

1. Which of the following is not a function of cysts for protozoa?
T F A. Protect against adverse environments
T F B. Sites for nuclear reorganization and cell division
T F C. Serve as a means of transfer between hosts in parasitic species
T F D. All of the above

2. Which of the following is not true of Protozoa?
T F A. Lack cell wall
T F B. Produce no sporebearing structures
T F C. Comprise the microbial population known as phytoplankton
T F D. Form active feeding forms called trophozoites

3. Sexual reproduction in the Protozoa occurs most commonly by
T F A. conjugation
T F B. gametangial contact
T F C. binary fission
T F D. binary fusion

4. Members of the Protozoa may motile by all of the following methods except
T F A. flagella
T F B. gliding by slime secretion
T F C. cilia
T F D. pseudopodia

5. Protozoa are generally not
T F A. multicellular
T F B. microscopic
T F C. lacking cell walls
T F D. eukaryotic

6. Saprophytic fungi
T F A. engulf their food in order to break it down.
T F B. secure their food from dead organic materials
T F C. both (a) and (b)
T F D. none of the above

7. Which of the following does not represent a human disease caused by fungi?
T F A. Ringworm

T F B. Cryptococcosis
T F C. Malaria
T F D. Jock itch

8. Fungi that lack partitions (septa) are called
T F A. ahyphae
T F B. coenocytic
T F C. yeast
T F D. conidia

9. Select the statement that does not apply to the kingdom Fungi
T F A. The fungi are eukaryotic, multicellular, ingestive heterotrophs
T F B. Some fungi form beneficial interrelationships with plants
T F C. The fungal life cycle typically includes a spore stage
T F D. Certain fungi are natural sources of antibiotic substances

10. _____ exhibit yeast-like growth at human body temperatures and mold-like growth at room temperature.
T F A. Dimorphic fungi
T F B. Black bread molds
T F C. Sac fungi
T F D. Water molds

11. The habitat is the large intestine.
T F A. Entamoeba gingivalis
T F B. Giardia lamblia
T F C. Entamoeba histolytica
T F D. Naegleria fowleri

12. The stool is the specimen for the diagnosis of the infection cause by
T F A. Acanthamoeba polyphaga
T F B. Naegleria fowleri
T F C. Balantidium coli
T F D. A & B

13. The infective stage of Entamoeba histolytica to man has
T F A. pseudopodia
T F B. bull's eye karyosome
T F C. ingested red blood cells
T F D. A & B

14. The pathogenic stage of Entamoeba histolytica to man has
T F A. pseudopodia
T F B. cigar-shaped chromatoidal body
T F C. ingested RBC
T F D. A & B

15. The specimen for the diagnosis of Trichomonas vaginalis infection in female.
T F A. Prostatic secretions
T F B. Vaginal discharges
T F C. Urine
T F D. B & C

16. The usual infective stage of Malaria to man is the
T F A. gametocytes
T F B. sporozoites
T F C. schizonts
T F D. merozoites

17. Produces the more severe type of Malaria
T F A. Plasmodium falciparum
T F B. Plasmodium ovale
T F C. Plasmodium malariae
T F D. Plasmodium vivax

18. Stage/s of Malaria usually found in man.
T F A. Gametes
T F B. Trophozoites
T F C. Schizonts
T F D. B & C

19. Malaria with the highest degree of parasitaemia in man.
T F A. Plasmodium falciparum
T F B. Plasmodium vivax
T F C. Plasmodium malariae
T F D. A & B

20. Opportunistic Protozoa in the stomach and intestine.
T F A. Cryptosporidium parvum
T F B. Toxoplasma gondii
T F C. Pneumocystis carinii
T F D. A & C

21. Produces congenital infection in man.
T F A. Cryptosporidium parvum
T F B. Toxoplasma gondii
T F C. Pneumocystis carinii
T F D. A & C

22. Produces massive diarrhea in patient with low resistance.
T F A. Cryptosporidium parvum
T F B. Toxoplasma gondii

T F C. Pneumocystis carinii
T F D. A & C

23. Produces autoinfection to man.
T F A. Ancylostoma duodenale
T F B. Necator americanus
T F C. Ascaris lumbricoides
T F D. Strongyloides stercoralis

24. What parasite/s has a blood-lung phase in the life cycle?
T F A. Ascaris lumbricoides
T F B. Strongyloides stercoralis
T F C. Enterobius vermicularis
T F D. A &C

25. The usual manner of transmission by the parasite is by skin penetration.
T F A. Ascaris lumbricoides
T F B. Strongyloides stercoralis
T F C. Necator americanus
T F D. B & C

26. What parasite produces infection that simulates tuberculosis?
T F A. Clonorchis sinensis
T F B. Opisthorchis felineus
T F C. Fasciola hepatica
T F D. Paragonimus westermani

27. The infective stage of what parasite is encysted in aquatic vegetations?
T F A. Clonorchis sinensis
T F B. Echinostoma ilocanum
T F C. Fasciolopsis buski
T F D. Paragonimus westermani

28. What stage of the Trematodes swims in the water?
T F A. Cercariae
T F B. Metacercariae
T F C. Coracidium
T F D. Sporocyst

29. What is the infective stage of Schistosoma to man?
T F A. Cercariae
T F B. Metacercariae
T F C. Embryonated egg
T F D. Miracidium

30. What is the usual manner of transmission of Schistosoma to man?

T F A. Arthropod vector
T F B. Skin penetration of the cercariae
T F C. Ingestion of the embryonated egg
T F D. B & C

31. What Schistosoma produces more severe infection to man?
T F A. Schistosoma haematobium
T F B. Schistosoma mansoni
T F C. Schistosoma japonicum
T F D. Schistosoma mekongi

32. Diphyllobothrium latum is associated with
T F A. cat
T F B. fish
T F C. dog
T F D. pig

33. Produces cysticercosis to man.
T F A. Dipylidium caninum
T F B. Taenia solium
T F C. Taenia saginata
T F D. B & C

34. Taenia saginata is associated with
T F A. cat
T F B. dog
T F C. cattle
T F D. pig

35. The most commonly involved organ in Hydatid Disease is the
T F A. liver
T F B. kidney
T F C. lungs
T F D. brain

36. Viruses range in size from:
T F A. 1-100 nm
T F B. 25-300 nm
T F C. 10-100 μm
T F D. 1-10 μm

37. A structural component that is found in all viruses is:
T F A. The envelope
T F B. DNA
T F C. Capsid
T F D. Spikes

38. Viruses that can remain latent (usually in neurons) for many years are most likely:
T F A. Togaviruses
T F B. Herpesviruses
T F C. Enteroviruses
T F D. Retroviruses

39. Bacteriophage are readily counted by the process of:
T F A. ELISA
T F B. Plaque assays
T F C. Tissue cell culture
T F D. Electron Microscopy

40. A chemical component that is found in all viruses is:
T F A. Protein
T F B. Lipid
T F C. DNA
T F D. RNA

SECTION B: SHORT ANSWERS [20 MARKS]
Answer all questions in this section

B1. Explain what you understand by the following parasitic diseases
(i). Cystercercosis (2)
(ii). Hydatid disease (2)

B2. Describe the following techniques of parasite examination:
(i). Floatation technique (4)
(ii). Sedimentation technique (4)

B3. Describe one fungal infection associated with the following:
(i). Superficial infection (2)
(ii). Subcutaneous infection (2)
(iii). Systemic infection (2)
(iv). Opportunistic infection (2)

SECTION C: LONG ANSWERS [60 MARKS]

Choose three questions in this section

C1. Illustrate and describe the life cycle of *Plasmodium falciparum* (20)

C2. Illustrate and describe the life cycle of *Ascaris lumbricoides* (20)

C3. Describe how parasites of medical importance are classified, giving at least one example of each class (20)

C4. Illustrate how ELISA and PCR techniques can be used for diagnosis of viral infections, giving an example for of typical viral infection for each technique (20)

C5. Write short notes on immune response to parasitic infections (20)