



TECHNICAL UNIVERSITY OF MOMBASA

Faculty of Applied and Health Sciences

DEPARTMENT OF MEDICAL SCIENCES

DIPLOMA IN MEDICAL LABORATORY SCIENCES
(DMLS)

AML 2130 : PROTOZOOLOGY

SPECIAL/SUPPLEMENTARY: EXAMINATIONS

SERIES: OCTOBER 2013

TIME: 2 HOURS

INSTRUCTIONS:

You should have the following for this examination

- *Answer booklet*

This paper consists of **TWO** sections.

Answer all questions in **Section A** and **B**. $\frac{1}{2}$ marks deducted for any wrong answer in **Section A**.

This paper consists of 9 PRINTED pages

SECTION A (40MARKS)

1. The free-living amoeba that causes primary amoebic meningoencephalitis (PAM) is :-
 - a) *Acanthamoeba castellanii*
 - b) *Acanthamoeba polyphaga*
 - c) *Balamuthia mandrillaris*
 - d) *Naegleria fowleri*
 - e) *Sappinia diploidea*

2. The amoeba not found in the gut causing granulomatous amoebic encephalitis (GAE) is:-
 - a) *Acanthamoeba castellanii*
 - b) *Balamuthia mandrillaris*
 - c) *Entamoeba hartmani*
 - d) *Maegleria fowleri*
 - e) *Sappinia diploidea*

3. The malaria parasite stage transmitted by vector female anophelid mosquito is:-
 - a) Trophozoite
 - b) Protozoa
 - c) Sporozoites
 - d) Oocyst
 - e) Zygote

4. The stages of malaria parasites that are not found in mosquito vector include
 - a) Ookinete
 - b) Sporozoites
 - c) Oocyst
 - d) Zygote
 - e) Merozoites

5. The protozoan parasite that may be transmitted by mouth:-
 - a) *Trichomonas hominis*
 - b) *Trichomonas tenax*
 - c) *Pentatrichomonas*
 - d) *Trichomonas vaginalis*
 - e) *Chilomastix mesnili*

6. The flagellate parasite that has four free anterior flagella of equal length and one trailing flagellum which break free 1/3 to 1/5 from tip of organism
 - a) *Trichomonas tenax*
 - b) *Trichomonas vaginalis*
 - c) *Trichomonas hominis*
 - d) *Giardia lamblia*
 - e) *Trichomonas trichomonas*

7. Sexual phenomenon, known as conjugation is effected by:-
 - a) *Entamoeba histolytica*
 - b) *Belantidium coli*
 - c) *Trichomonas vaginalis*

- d) *Trichomonas fenax*
 - e) *Giardia lembilia*
8. The very common definitive host for *belantidium coli* is :-
- a) Human
 - b) Cow
 - c) Giraff
 - d) Dog
 - e) Cats
9. The anterior depression which is prominent in the ectoplasm known as cell mouth is also referred to :-
- a) Peristome
 - b) Cytopage
 - c) Cytostome
 - d) Food pocket
 - e) Cytostomack
10. The vector for the American trypanosomiasis is :-
- a) Sand flies
 - b) Tsetse flies
 - c) Red bugs
 - d) *Glossina*
 - e) Triatomine bugs
11. Leishmaniasis is transmitted by
- a) Sandflies
 - b) Tsetse flie
 - c) Mosquitoes
 - d) *Glossina*
 - e) Triatomine bugs
12. Trypanosome *gambiense* causes
- a) Acute sleeping sickness
 - b) Long standing sleeping sickness with haemorrhagic fever
 - c) Diarrhea with sleeping sickness
 - d) Chronic sleeping sickness
 - e) Mild sleeping sickness
13. African trypanosomiasis have three types of transmission except
- a) Mechanical through soiled proboscis of fly after uninterrupted blood meal from infected person
 - b) Insect vector though a bite of *Glossina* species which is infected
 - c) Congenital (Mother to child)
 - d) Sexual intercese
 - e) Through the bite of infected Tsetse fly
14. Which of the following protozoa trophozoite have characteristics of very active movement, contain food vacuole and bacteria, burst when in contact with water
- a) *Iodamoeba butshli*

- b) *Dientamoeba fragilis*
 - c) *Entamoeba gingivalis*
 - d) *Entamoeba hartmanni*
 - e) *Entamoeba coli*
15. The trophozoite of protozoan amoeba with characteristic of not being motile or non-progressive is:-
- a) *Logamoeba butsehli*
 - b) *Drentaeba fragilis*
 - c) *Entamoeba gingivalis*
 - d) *Entamoeba hartmanni*
 - e) *Entamoeba coli*
16. Which of the following statement is true for *Entamoeba histolytica* ?
- a) Reproduction by conjugation
 - b) Reproduction by longitudinal binary fission
 - c) Reproduction by binary fission
 - d) Reproduction by transverse binary fission
 - e) Reproduction sexually
17. The cystic stage of the following amoeba is not observed:-
- a) *Dientamoeba fragilis*
 - b) *Iodamoeba butschli*
 - c) *Entamoeba coli*
 - d) *Entamoeba hartmanni*
 - e) *Entamoeba histolytica*
18. Cystic stage appear round or oval, Nucleus 1-4 with large karyosome usually seen a four (4) refractive bodies in the cyst is :-
- a) *Entamoeba polecki*
 - b) *Iodamoeba butshli*
 - c) *Entamoeba coli*
 - d) *Entamoeba histolytica*
 - e) *Endolimax nana*
19. The characteristic feature of the cyst include one large glycogen vacuole which stain deep brown with iodine is for
- a) *Entamoeba gingivalis*
 - b) *Iodamoeba gingivalis*
 - c) *Entamoeba coli*
 - d) *Entamoeba histolytica*
 - e) *Endolimax nana*
20. Parasites that infect human during hot months by swimming or diving in warm water is:-
- a) *Entamoeba polecki*
 - b) *Entamoeba hartmanni*
 - c) *Naegleria fowleri*
 - d) *Iodamoeba butshili*
 - e) *Entamoeba histolytica*
21. Transmission of *Giardia lamblia* is by:-

- a) Sexual transmission
 - b) Vector is involved in transmission
 - c) Becoming in contact with fresh water bodies
 - d) Direct ingestion of mature cystic stage
 - e) Ingestion of under cooked or raw beef
22. Which of the following stages of malaria parasite is not seen in peripheral blood?
- a) Sporozoites
 - b) Trophozoites
 - c) Schizonts
 - d) Gametocytes
 - e) Ring form
23. The animals that are suspected of being the reservoirs of visceral leishmaniasis in Kenya
- a) Cats
 - b) Wild pigs
 - c) Dogs
 - d) Hyenas
 - e) Donkeys
24. The following belong to salivaria group of trypanosomes except :-
- a) Trypanosoma gambiense
 - b) Trypanosoma duttoni
 - c) Trypanosoma vivax
 - d) Trypanosoma uniformis
 - e) Trypanosoma rhodesiense
25. Visceral leishmaniasis is also known as
- a) Romana sign
 - b) Kerandel sign
 - c) Winter bottom sign
 - d) Nagana disease
 - e) Kalar -azar
26. Which of the following trypanosomes have no cyclic development in Tsetse flies
- a) Trypanosoma rhodesiense
 - b) Trypanosoma sai
 - c) Trypanosoma rangei
 - d) Trypanosoma gambiense
 - e) Trypanosoma vivax
27. The promastigotes of leishmania donovani are found in:-
- a) Macrophages of the skin
 - b) Striated muscles
 - c) Lymph nodes
 - d) Liver
 - e) Reticulo endothelial system
28. Leishmania tropica have the following symptoms and pathology

- a) Non-pathogenic trypanosomiasis
 - b) Chaga's disease
 - c) Fever, splenomegaly and anaemia
 - d) Lesion characterized with a depressed centre
 - e) Oedematous coetaneous swelling (changoma)
29. The vectors of kalar-azar include the following insects except:
- a) Phelebotomus perniciosus
 - b) Phelebotomus major
 - c) Glossina morsitans
 - d) Phelebotomus papatasi
 - e) Phelebotomus aegyptus
30. To control tsetse flies you need to :-
- a) Bush clearing, Game destruction, residual insecticiding
 - b) Bush clearing, boil water 55°C, residual insecticide
 - c) Game destruction, residual insecticide, use treated water
 - d) Treatment of infected persons, wearing shoes, bush clearing
 - e) Physical modification, Game destruction, planting trees
31. Which one of the following protozoan parasites belong to the order haemosporidia
- a) Isospora
 - b) Leishmania
 - c) Balantidium
 - d) Plasmodium
 - e) Trypanosoma
32. Romanas sign is pathology associated with :-
- a) Trypanosoma gambiense
 - b) Trypanosoma cruzi
 - c) Trypanosoma rhodesiense
 - d) Trypanosoma brucei
 - e) Leishmania donovani
33. Balantidium coli is common in
- a) Cattle and goats
 - b) Monkey and pigs
 - c) Sheep and donkey
 - d) Fowl and birds
 - e) Human
34. Arthropods that transmit malaria is :-
- a) Aedes
 - b) Culex
 - c) Toxorychites
 - d) Mansonia
 - e) Anopheles

35. The double chromatin dot is a characteristics of :-
- P.falciparun
 - P.Malariae
 - P.Vivax
 - P.Ovale
 - Bird malaria
36. The characteristic morphology found on the infected RBC with plasmodium malariae
- Bird eye view
 - Double infection
 - A'cole form
 - Gametocyte
 - Schizontes
37. The malaria infection sign and symptoms include
- Itching
 - Loss of weight
 - Hypoglycemia
 - Red eye ball
 - High temperature
38. Which of the following malaria parasite species causes quartan malaria
- Plasmodium ovale
 - Plasmodium falciparum
 - Plasmodium malariae
 - Plasmodium vivax
 - Plasmodium lenis
39. In life cycle of malaria parasites exflagellation occurs in:-
- Macrogametocylis
 - Female gametes
 - Gametocytes
 - Microgametocytes
 - Sporozoites
40. Applique form of malaria parasite belong to :-
- Coccidia
 - Plasmodium vivax
 - Plasmodium malariae
 - Plasmodium falciparum
 - Plasmodium ovale

SECTION B

1. (a) State in detail the preventive and control measures that can be instituted against intestinal protozoa.
(10marks)
- (b) Outline TWO control and preventive measures against naegleria fowleri (free-living amoeba) **(5marks)**
- (c) With the aid of labelled diagram state the diagnostic characteristics of cyst of Entamoeba histolytica **(5marks)**
2. (a) Briefly describe the basic factors for transmission of parasitic diseases **(10marks)**
- (b) Discuss the morphological characteristic of trophozoite stage of entamoeba histolytica
(5marks)
- (c) List FIVE preventive and control measures that could be carried out against African trypanosomiasis
(5marks)
3. (a) Discuss briefly the control of malaria **(10marks)**
- (b) List FIVE morphological general features of malaria parasite **(10marks)**