

أسئلة وأجوبة إمتحان أوليات ٣٠١ ح

(ورقة إمتحانية كاملة)

كلية: العلوم

قسم: علم الحيوان

المستوى: الثالث

الشعبة: بيوتكنولوجى

تاريخ الإمتحان: ١٤ / ١ / ٢٠١٧

استاذ المادة: د/ داليا سعيد حمزة

I- Choose the correct answer: (23 Mark)

1. _____ protects against unfavorable environmental condition.
a. Cyst. b. Contractile vacuole. c. Food vacuole. d. Nucleus
2. _____ means feeding actively on other organisms.
a. Holozoic nutrition. b. Holophytic nutrition. c. Saprozoic nutrition.
3. Sleeping sickness in human is caused by _____.
a. *Trypanosoma*. b. *Amoeba*. c. *Plasmodium*. d. *Ascaris*.
4. All of the following moves by flagellum EXCEPT _____.
a. *Giardia*. b. *Euglena*. c. *Paramecium*. d. *Trichomonas*.
5. Which of the following is characteristic of protozoa?
a. excretion by 2 kidneys b. sized 5-12 cm c. unicellular d. multicellular
6. Sarcodina are commonly called _____.
a. ciliates. b. flagellates. c. amoeboids. d. sporozoans.
7. All of the following don't have locomotory organ EXCEPT _____.
a. *Plasmodium*. b. *Toxoplasma*. c. *Giardia*. d. *Sarcocystis*.
8. Food vacuole is present in _____.
a. *Paramecium* b. *Entamoeba coli* c. *Amoeba* d. all of these.
9. Phytomastigophorea contains _____.
a. *Ceratium*. b. *Trichomonas* c. *Globigerina*. d. *Paramecium*.
10. *Amoeba* is found in _____.
a. freshwater b. human mouth cavity c. human stomach d. human large intestine
11. Contractile vacuole is present in _____.
a. *Didinium* b. *Giardia* c. *Entamoeba coli* d. all of these.
12. *Plasmodium* causes _____.
a. Sleeping sickness b. Fever malaria. c. Giardiasis d. Toxoplasmosis
13. _____ has one nucleus in its cytoplasm.
a. *Opalina* b. *Paramecium* c. *Euglena* d. *Arcella*

14. Tsetse fly is the intermediate host of _____.
 a. *Plasmodium*. b. *Amoeba*. c. *Toxoplasma*. d. *Trypanosoma*
15. *Euglena* can reproduce by _____.
 a. budding. b. autogamy. c. conjugation. d. binary fission.
16. Chief function of contractile vacuole is _____.
 a. temperature regulation b. digestion c. reproduction d. osmoregulation
17. The infective stage of *Entamoeba coli* is _____.
 a. egg b. cercaria c. metacercaria d. cyst
18. *Opalina* lives as commensal in the large intestine of _____.
 a. cow b. man c. cat d. frogs
19. Sarcodina contains _____.
 a. *Opalina* b. *Euglena* c. *Globigerina* d. *Giardia*
20. *Giardia* can reproduce by _____.
 a. conjugation. b. budding. c. binary fission. d. multiple fission.
21. The intermediate host of *Sarcocystis* is _____.
 a. pig b. frog c. cattle d. man
22. Human or animal infection with _____ can result from ingestion of material contaminated with infected cat feces.
 a. Amoebiasis. b. Toxoplasmosis c. Giardiasis. d. None of the previous.
23. *Trichomonas* belongs to class _____.
 a. Sarcodina. b. Mastigophora c. Pytomastigophorea. d. Zoomastigophorea.
24. The most common method of asexual reproduction in the Protozoa is by _____.
 a. conjugation. b. fusion. c. autogamy. d. binary fission.
25. All of the following moves by pseudopodia EXCEPT _____.
 a. *Amoeba*. b. *Globigerina*. c. *Arcella*. d. *Trichomonas*.
26. _____ is a parasite of human urethra.
 a. *Giardia intestinalis* b. *Opalina* c. *Trypanosoma* d. *Trichomonas vaginalis*
27. _____ is a universal and common inhabitant in the upper small intestine of man monkey and pigs and cause giardiasis.
 a. *Trichomonas* b. *Amoeba* c. *Toxoplasma* d. None of the previous
28. Which protozoan reproduces both by binary fission and conjugation?
 a. *Paramecium*. b. *Amoeba*. c. *Plasmodium*. d. *Euglena*.

29. In the life cycle of *Plasmodium*, the ring stage is formed in the _____.
 a. human gut. b. human red blood cells. c. mosquito gut. d. human white blood cells.
30. Protozoa may motile by each of following methods EXCEPT _____.
 a. pseudopodia. b. flagella. c. tentacles d. cilia
31. Subphylum Sporozoa contains _____.
 a. *Toxoplasma*. b. *Giardia*. c. *Amoeba* d. *Paramecium*.
32. Besides erythrocytes, *Plasmodium* attacks _____.
 a. kidney cells b. hepatic cells c. nerve cells d. muscle cells
33. Trypanosomes reproduce by _____.
 a. gametocyte fusion b. binary fission c. budding d. schizogony
34. Micronucleus and macronucleus are found in _____.
 a. *Amoeba* b. *Euglena* c. *Balantidium* d. All of the previous
35. *Entamoeba* differs from *Amoeba* in having _____.
 a. One contractile vacuole b. Two contractile vacuoles c. No contractile vacuoles
36. *Entamoeba histolytica* causes _____.
 a. Dysentery b. *Giardiasis* c. Malaria d. Typhoid
37. Infective stage of *Plasmodium* to man is _____.
 a. Sporozoite b. Merozoite c. Gametocyte d. Cryptomerozoite
38. Which of these has two hosts?
 a. *Amoeba* b. *Sarcocystis* c. *Euglena* d. *Entamoeba coli*
39. Excretion in *Amoeba* is by _____.
 a. contractile vacuole b. body surface c. pseudopodia d. nucleus
40. Which of these has only one host _____?
 a. *Sarcocystis* b. *Plasmodium* c. *Giardia* d. *Trypanosoma*
41. The word "pseudopodia" means _____.
 a. small cell b. fake eye c. false foot d. first animal
42. Where do zooflagellates live?
 a. Freshwater. b. Marine water. c. Within bodies of animals. d. None of the previous.
43. Members of phylum Sporozoa are _____.
 a. parasites b. marine c. autotrophs d. All of the previous

44. *Balantidium* lives in _____.

- a. fresh water. b. marine water. c. large intestine of pigs. d. urethra of man.

45. The _____ is a long, stiff threads made of ectoplasm.

- a. Lobopodia. b. Filopodia. c. Rhizopodia. d. Axopodia

46. Reproduction is by budding in _____.

- a. *Amoeba* b. *Euglena* c. *Balantidium* d. *Ephelota*

II- Write about each of the following:

(25 Mark)

1. Parasitic nutrition.
2. Life cycle of *Toxoplasma*.
3. Life cycle of *Trypanosoma*
4. Body envelope and skeleton.
5. General characters of Ciliata.

With Best Wishes

Dr. Dalia Said Hamza

14/1/2017

Answers

I- Choose the correct answer:

(23 Mark)

1. a. Cyst.
2. a. Holozoic nutrition.
3. a. *Trypanosoma*.
4. c. *Paramecium*.
5. c. unicellular
6. c. amoeboids.
7. c. *Giardia*.
8. d. all of these.
9. a. *Ceratium*.
10. a. freshwater
11. a. *Didinium*
12. b. Fever malaria.
13. c. *Euglena*
14. d. *Trypanosoma*
15. d. binary fission.
16. d. osmoregulation
17. d. cyst
18. d. frogs
19. c. *Globigerina*
20. c. binary fission.
21. c. cattle
22. b. Toxoplasmosis

23. d. Zoomastigophorea.
24. d. binary fission.
25. d. *Trichomonas*.
26. d. *Trichomonas vaginalis*
27. d. None of the previous
28. a. *Paramecium*.
29. b. human red blood cells.
30. c. tentacles
31. a. *Toxoplasma*.
32. b. hepatic cells
33. b. binary fission
34. c. *Balantidium*
35. c. No contractile vacuoles
36. a. Dysentery
37. a. Sporozoite
38. b. *Sarcocystis*
39. b. body surface
40. c. *Giardia*
41. c. false foot
42. c. Within bodies of animals.
43. a. parasites
44. c. large intestine of pigs.
45. d. Axopodia
46. d. *Ephelota*

II- Write about each of the following:

(25 Mark)

1. Parasitic nutrition.

The parasitic forms feed either holozoically or saprozoically. Thus, the parasites may be grouped into two categories on the nature of food and their mode of feeding:

Food-robbers: The parasites feeding upon the undigested or digested foodstuffs of their hosts are known as food-robbers, such as some ciliate parasites like *Nyctotherus*, *Balantidium*. These parasites feed holozoically on solid food particles, while few others like *Opalina* feed upon the liquid food by the process of osmosis through their general body surfaces. The food-robbers are generally non-pathogenic to their hosts.

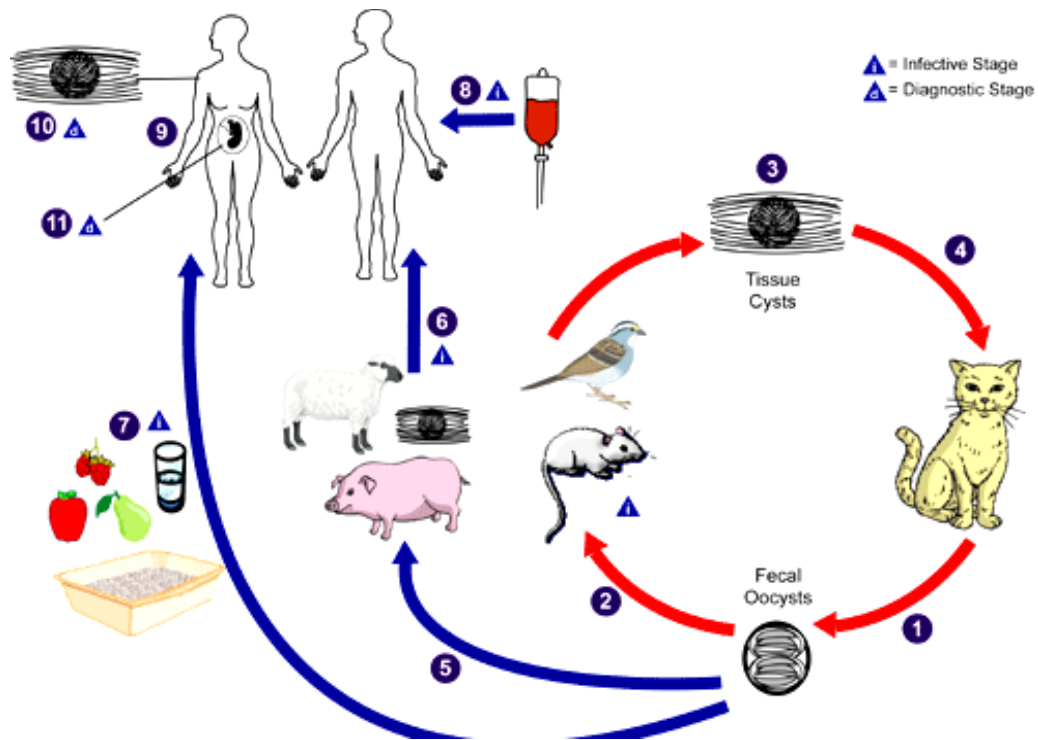
Pathogenic: The protozoan parasites causing harm to their hosts, usually feed upon the living tissues of the host. They absorb liquid food through their general body surface, e.g., *Trypanosoma*, *Plasmodium*, etc.

2. Life cycle of *Toxoplasma*.

The only known definitive hosts for *Toxoplasma gondii* are members of family Felidae (domestic cats and their relatives). Unsporulated oocysts are shed in the cat's feces ①. Although oocysts are usually only shed for 1-2 weeks, large numbers may be shed. Oocysts take 1-5 days to sporulate in the environment and become infective. Intermediate hosts in nature (including birds and rodents) become infected after ingesting soil, water or plant material contaminated with oocysts ②. Oocysts transform into tachyzoites shortly after ingestion. These tachyzoites localize in neural and muscle tissue and develop into tissue cyst bradyzoites ③. Cats become infected after consuming intermediate hosts harboring tissue cysts ④. Cats may also become infected directly by ingestion of sporulated oocysts. Animals bred for human consumption and wild game may also become infected with tissue cysts after ingestion of sporulated oocysts in the environment ⑤. Humans can become infected by any of several routes:

- eating undercooked meat of animals harboring tissue cysts ⑥.
- consuming food or water contaminated with cat feces or by contaminated environmental samples (such as fecal-contaminated soil or changing the litter box of a pet cat) ⑦.
- blood transfusion or organ transplantation ⑧.
- transplacentally from mother to fetus ⑨.

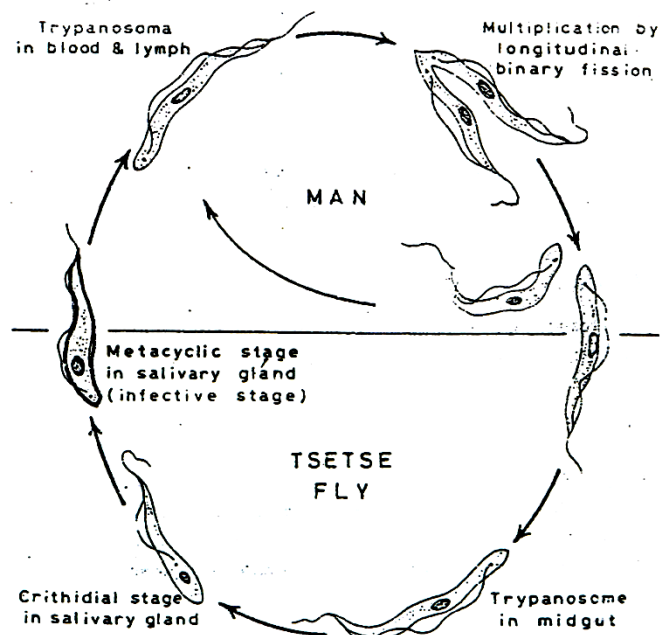
In the human host, the parasites form tissue cysts, most commonly in skeletal muscle, myocardium, brain, and eyes; these cysts may remain throughout the life of the host. Diagnosis is usually achieved by serology, although tissue cysts may be observed in stained biopsy specimens ⑩. Diagnosis of congenital infections can be achieved by detecting *T. gondii* DNA in amniotic fluid using molecular methods such as PCR ⑪.



3. Life cycle of *Trypanosoma*.

In the blood of man; there are two main forms of the parasite, these are the stumpy forms which are short, thick with a very short or no flagella, and the slender long flagellum. The parasites multiply in the blood of human beings and cause trypanosome fever, and may reach to the central nervous system and cause death.

When tsetse fly bites an infected person, some of the parasites are sucked with the blood into the fly midgut. In the intestine, all are digested except the stumpy forms, which will multiply giving rise to the slender long forms, which will migrate to the salivary glands giving rise to crithidial forms, which will give rise to metacyclic forms (infective stage) and thus fly becomes infective.



4. Body envelope and skeleton.

In Protozoa, the body envelope and external skeletal layers mark the boundary line between the body protoplasm and external environment. These protect them from external environmental hazards. The body envelope, being selective in nature, allows exchange of substances across it and helps in perceiving various types of stimuli. The body envelope of most protozoans may be either plasmalemma or pellicle. In some species like *Amoeba proteus*, the body envelope is a thin plasma membrane or plasmalemma which is mucopolysaccharide in nature. The pellicle is comparatively thicker, tough, elastic and proteinous in nature; it helps in maintaining the general shape of the protozoans and performs the usual functions as in *Euglena*.

The skeletal layers are secreted in other protozoans in which their protoplasmic body remains protected. These include **cyst**, **theca**, **lorica** and **test** or **shell**. The **cyst** is an external temporary sheath formed both by free living and parasitic individuals. It is primarily secreted during unfavourable conditions. The **theca** is another skeletal layer found in many dinoflagellates like *Ceratium*. It is a coat of closely-fitted armor of cellulose. The **lorica**, in majority of dinoflagellates like *Poteriodendron*, is differentiated into a number of plates arranged into a definite pattern; but in some forms, it may be formed of two valves. The **shells** or **tests** are still other skeletal layer of protozoans; these are of common occurrence. There is loose armor with one or more openings over the body of protozoan like *Arcella* and *Diffflugia*. The foraminiferan shells are made of calcium carbonate, while shells found in some rhizopods like *Euglypha* are siliceous being made of silica.

5. General characters of Ciliata.

1. Most species are free living and abundant in both marine and freshwater habitats..
2. Ciliata protozoans have a definite body form and size.
3. Body bounded externally by a firm and elastic pellicle.
4. Locomotory and feeding organelles are cilia.
5. Definite mouth (cytostome) and gullet present. Anal aperature (cytopyge) permanent.
6. Contractile vacuoles are always present at fixed positions.
7. Have two types of nuclei: larger vegetative macronucleus and small reproductive micronucleus.
8. Binary fission is transverse.
9. Sexual reproduction never involves the formation of gametes.

Examples: Didinium, Balantidium, *Paramecium*, *Vorticella*, *Ephelota*, *Stentor*, *Nyctotherus*.