

مناعة وطفيليات ٤١٤ ح

أسئلة وأجوبة جزء الطفيليات (نصف ورقة إمتحانية)

تيرم صيفى ٢٠١٦

كلية: العلوم

قسم: علم الحيوان

المستوى: الرابع

الشعبة: حيوان وكيمياء

تاريخ الإمتحان: ٢٠١٦ / ٨ / ٢٨

الممتحن: د/ داليا سعيد حمزة

## Parasitology

### I- Choose the correct answer:

(10 Degree)

- \_\_\_\_\_ protects protozoans against unfavorable environmental condition.  
a. Cyst.      b. Contractile vacuole.      c. Food vacuole.      d. Nucleus
- \_\_\_\_\_ means feeding actively on other organisms.  
a. Holozoic nutrition.      b. Holophytic nutrition.      c. Saprozoic nutrition.
- Sleeping sickness in human is caused by \_\_\_\_\_.  
a. *Trypanosoma*.      b. *Amoeba*.      c. *Plasmodium*.      d. *Ascaris*.
- The infective stage of *Entamoeba coli* is \_\_\_\_\_.  
a. egg      b. cercaria      c. metacercaria      d. cyst
- Giardia* can reproduce by \_\_\_\_\_.  
a. conjugation.      b. budding.      c. binary fission.      d. multiple fission.
- The intermediate host of *Sarcocystis* is \_\_\_\_\_.  
a. pig      b. frog      c. cattel      d. man
- Entamoeba histolytica* causes \_\_\_\_\_.  
a. Dysentery      b. *Giardiasis*      c. Malaria      d. Typhoid
- Which of these has only one host \_\_\_\_\_?  
a. *Sarcocystis*      b. *Plasmodium*      c. *Giardia*      d. *Trypanosoma*
- Fever malaria in human is caused by  
a. *Plasmodium*.      b. *Trypanosoma*.      c. *Amoeba*.      d. *Ascaris*.
- Tsetse fly is the intermediate host of \_\_\_\_\_.  
a. *Plasmodium*.      b. *Amoeba*.      c. *Toxoplasma*.      d. *Trypanosoma*
- Trichomonas* belongs to class \_\_\_\_\_.  
a. Sarcodina.      b. Mastigophora      c. Pytomastigophorea.      d. Zoomastigophorea.
- Which of the following is characteristic of protozoa?  
a. excretion by 2 kidneys      b. sized 5-12 cm      c. unicellular      d. multicellular



## Answers Parasitology

### I- Choose the correct answer:

(10 Degree)

1. a. Cyst.
2. a. Holozoic nutrition.
3. a. *Trypanosoma*.
4. d. cyst.
5. c. binary fission.
6. c. cattel
7. a. Dysentery
8. c. *Giardia*
9. a. *Plasmodium*.
10. d. *Trypanosoma*
11. d. Zoomastigophorea.
12. c. unicellular
13. a. is direct
14. b. Penetration by filariform larva.
15. a. stomach
16. a. egg
17. d. Tape worms
18. b. cornea
19. b. *Entamoeba coli*
20. b. microfilaria

### II- Write about “four points” from the following:

(14 Degree)

#### **1- Different species of *Trichomonas* and their habitat.**

- a) *Trichomonas vaginalis*:** This species lives in the female vagina or the male urethra or prostate. In females it is common (up to 40%) and may cause trichomonas vaginitis, with inflammation and discharge. In males, mild inflammation of the urethra may occasionally result.
- b) *Tritrichomonas foetus*:** A parasite of cattle and in pregnant cows it may lead to abortion. Probably all parasites are expelled with the aborted foetus and placenta, but males should be slaughtered because treatment is expensive.
- c) *Trichomonas gallinae*:** A parasite of mouth, pharynx, oesophagus and crop of birds. In the young pigeons the parasite produces avian trichomoniasis, which is severe and may be fatal. The young birds get the infection from their parents during feeding.
- d) *Trichomonas hominis*:** this species inhabit the intestine of man, it is non pathogenic.

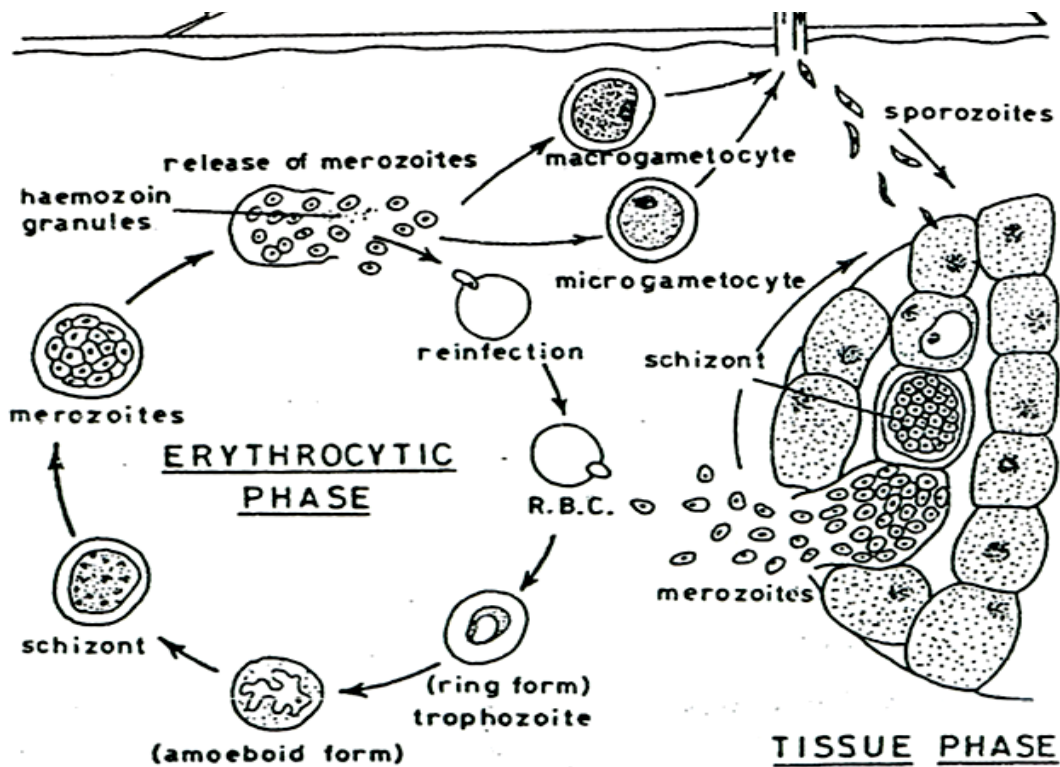
## 2- Life cycle of *Plasmodium vivax* in human.

### a) Pre-erythrocytic schizogony:

1. When the infected female *Anopheles* bites a man, sporozoites are injected with its saliva to his blood, where they are carried to the liver.
2. In the liver cells, sporozoites grow giving rise to the schizonts.
3. These schizonts are divided giving rise to a great number of merozoites.
4. The released merozoites either attack another liver cell where another process of multiplication takes place or pass to the blood where they attack the red blood cells.

### b) Erythrocytic schizogony:

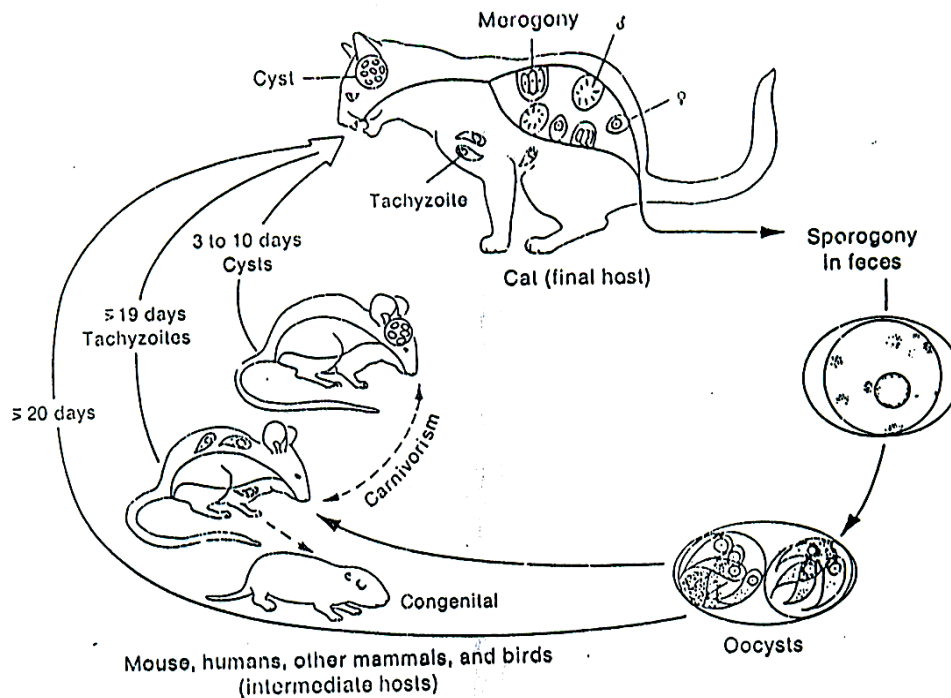
1. Merozoites penetrate the red blood cells where they grow giving rise to the ring stage trophozoite which changes into the amoeboid stage trophozoite.
2. The amoeboid trophozoites give rise to the schizont which will divide giving rise to the merozoites.
3. The released merozoites attack another R.B.Cs and repeat the cycle.
4. Toxins are liberated by the rupture of R.B.Cs causing malaria fever.



## 3- Life cycle of *Toxoplasma gondii*.

In the nature cycle, mice and rats containing infective cysts are eaten by the cat, which serves as definitive host for the sexual stage of the parasite. The cyst wall is digested, releasing organisms that penetrate epithelial cells of the small intestine of the cat. Several generations of intracellular multiplication occur, finally, the parasite develops micro and macrogametes, then fertilization occurs, and oocytes are developed and discharged into the intestinal lumen. Oocyst require 1-5 days to sporulate.

Human or animal infections can result from ingestion of material contaminated with infected cat feces, or by eating raw or partially cooked meat and drinking unboiled milk.

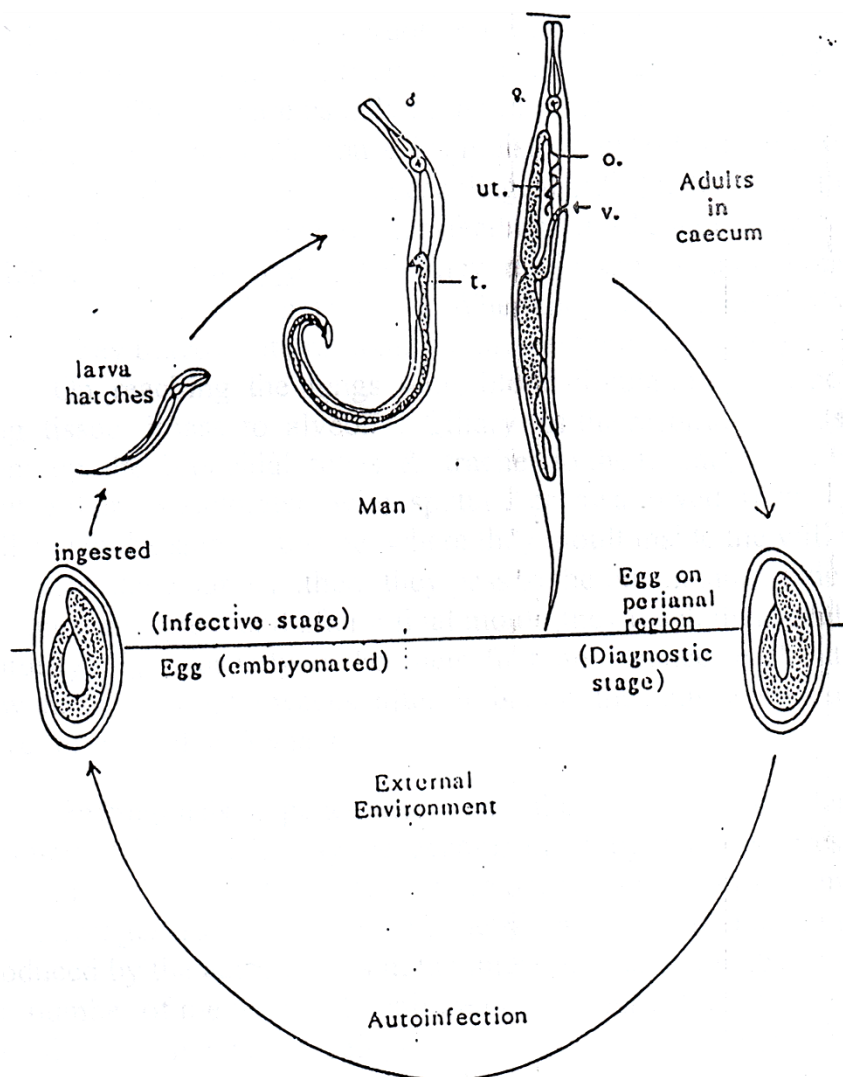


#### 4- General characters of Nematoda.

- a) **Habitat:** They live everywhere, many species are endoparasites.
- b) **Body shape:** This phylum includes elongate, cylindrical, non-segmented animals which exhibit bilateral symmetry.
- c) **Structure:** Body is triploblastic and has tissues and organs. There is no true coelomic cavity, but there is a cavity often referred to as the pseudocoel which is formed by the junction of the large vacuoles of special cells that occupy the space between the intestine and the body wall. The body is covered with a thick layer of finely ridged or smooth cuticle. The musculature is well developed, but entirely consisting of longitudinal fibres.
- d) **Digestive system:** They have a complete digestive tract with a mouth and an anus.
- e) **Excretory system:** The excretory system consists of few (usually two) cells which are drawn into two longitudinal tubules that end blindly at their posterior ends, while anteriorly they have a transverse ventral connection with a single mid-ventral opening close behind the mouth.
- f) **Nervous system:** The nervous system is composed of a circum-oesophageal nerve ring from which arise six short anterior trunks and six long posterior trunks.
- g) **Sex:** With few exceptions they are dioecious (sex are separate).
- h) **Life cycle:** The life cycle is direct, and rarely indirect as in Filariae.

## 5- Life cycle of *Enterobius vermicularis*.

Eggs are deposited on perianal folds. Self-infection occurs by transferring infective eggs to the mouth with hands that have scratched the perianal area. Person-to-person transmission can also occur through handling of contaminated clothes or bed linens. Enterobiasis may also be acquired through surfaces in the environment that are contaminated with pinworm eggs (e.g., curtains, carpeting). Some small number of eggs may become airborne and inhaled. These would be swallowed and follow the same development as ingested eggs. Following ingestion of infective eggs, the larvae hatch in the small intestine and the adults establish themselves in the colon. The time interval from ingestion of infective eggs to oviposition by the adult females is about one month. The life span of the adults is about two months. Gravid females migrate nocturnally outside the anus and oviposit while crawling on the skin of the perianal area. The larvae contained inside the eggs develop (the eggs become infective) in 4 to 6 hours under optimal conditions. Retroinfection, or the migration of newly hatched larvae from the anal skin back into the rectum, may occur but the frequency with which this happens is unknown.



## 6- Life cycle of *Wuchereria bancrofti*.

Different species of mosquitoes are vectors of *W. bancrofti* filariasis depending on geographical distribution. Among them are: *Culex*; *Anopheles*; *Aedes*; *Mansonia*; *Coquillettidia*. During a blood meal, an infected mosquito introduces third-stage filarial larvae onto the skin of the human host, where they penetrate into the bite wound. They develop in adults that commonly reside in the lymphatics. The female worms measure 80 to 100 mm in length and 0.24 to 0.30 mm in diameter, while the males measure about 40 mm by .1 mm. Adults produce microfilariae measuring 244 to 296  $\mu\text{m}$  by 7.5 to 10  $\mu\text{m}$ , which are sheathed and have nocturnal periodicity, except the South Pacific microfilariae which have the absence of marked periodicity. The microfilariae migrate into lymph and blood channels moving actively through lymph and blood. A mosquito ingests the microfilariae during a blood meal. After ingestion, the microfilariae lose their sheaths and some of them work their way through the wall of the proventriculus and cardiac portion of the mosquito's midgut and reach the thoracic muscles. There the microfilariae develop into first-stage larvae and subsequently into third-stage infective larvae. The third-stage infective larvae migrate through the hemocoel to the mosquito's proboscis and can infect another human when the mosquito takes a blood meal.

