Benha University	First Level Students	June 2013
Faculty of Science	General Zoology 2 (101ج)	Time: One hour
Zoology Department	Systematic Zoology	

I- Choose the best answer: (12 Mark)

1. *Amoeba* can reproduce by:
a. binary fission b. conjugation c. autogamy d. schizogony.

2. *Paramecium* belongs to _____.
a. ciliates. b. flagellates. c. amoeboids d. sporozoans.

3. Sleeping sickness in human is caused by
a. trypanosomes. b. amoeboids. c. euglenoids. d. cilliates.

4. *Euglena* moves by
a. flagella. b. pseudopodia. c. cilia. d. None of the previous.

5. The intermediate host of *Plasmodium* is _____.
a. Tsetse fly. b. *Anopheles*. c. *Lymnaea* . d. *Bulinus*.

6. Chief function of contractile vacuole is _____.
a. temperature regulation b. reproduction c. osmoregulation d. digestion

7. The most common method of sexual reproduction in the Protozoa is by
a. multible fission. b. budding. c. conjugation. d. binary fission.

8. Holozoic nutrition is characterized by _____.
a. formation of the food in the presence of carbon dioxid and sunlight.
b. feeding by absorbting solution of decayed organic and inorganic substances.
c. feeding on other organisms. d. feeding on plants.

9. Choanocytes of sponges:
a. create water currents for feeding. b. can develop into any of the other cell types.
c. give rise to the reproductive cells. d. the answers (b) and (c) are correct.

10. Sponges can reproduce by:
a. conjugation. b. regeneration. c. multiple fission. d. binary fission.

11. The coelenterate's inner layer of tissue is specialized for:
a. osmoregulation. b. digestion. c. locomotion. d. None of the previous.

12. In coelenterates, the nervous system is _____.
a. ganglionated. b. well developed. c. consists of a simple diffuse nervous tissue.
d. None of the above.

13. *Hydra* can reproduce by:
a. multible fission. b. binary fission. c. budding. d. conjugation.

14. The _____ nematocysts have unarmed, coiled and closed tube.
a. volvent. b. glutinant. c. penetrant. d. longitudinal.

15. *Taenia* lives in the _____ of man?
a. intestine b. blood c. liver d. kidney.

16. Phylum Platyhelminthes include all the following EXCEPT _____.
a. *Ascaris*. b. *Schistosoma*. c. *Taenia*. d. *Fasciola*.

17. Which of the following dosen't have a digestive system?
a. *Taenia*. b. *Fasciola.* c. *Schistosoma.* d. All of the previous.

18. *Lymnaea* spp. is the intermediate host of _____.
a. *Schistosoma.* b. *Fasciola.* c. *Taenia.* d. *Ascaris.*

19. Which of the following dosen't have an intermediate host?
a. *Taenia* b. *Fasciola* c. *Ascaris* d. *Schistosoma*

20. *Bulinus* is the intermediate host of:
a. *Fasciola hepatica* b. *Fasciola gigantica*
c. *Schistosoma* mansoni d. *Schistosoma* haematopium

21. *Ascaris* is a type of _____.
a. Liver flukes. b. Intestinal flukes. c. Blood flukes. d. Round worms.

22. *Schistosoma* is a type of _____.
a. Liver flukes. b. Intestinal flukes. c. Blood flukes. d. Round worms.

23. Which of the following is hermaphrodite?
a. *Taenia* b. *Fasciola* c. *Schistosoma* d. Answers (a) and (b).

24. The infective stage of *Schistosoma* is a _____.
a. cercaria b. metacercaria c. sporocyst d. redia

II- <u>Write about "two only" from the following</u>: (12 Mark)

1- Types of reproduction in Protozoa.
2- General characters of Coelenterata.
3- Life cycle of *Fasciola* (Illustrate your answer with a diagram).
4- Life cycle of *Ascaris* (Illustrate your answer with a diagram).

With best wishes

إجابة مادة تصنيف الحيوان (Systematic Zoology) – دور يونية 2013 (أولى علوم- ساعات معتمدة)

I- Choose the best answer:

1-a 2-a 3-a 4-a 5-b 6-c 7- c 8-c 9-a 10-b 11-b 12-c
13- c 14-a 15- a 16- a 17-a 18-b 19- c 20-d 21-d 22-c
23-d 24-a

II- (1) Types of reproduction in Protozoa:

a. Asexual reproduction:

- Binary fission: The animal is divided into equal daughter cells.
- Multiple fission: The protozoan divides into a number of daughter individuals.
- Budding: Some cells split via budding resulting in a 'mother' and 'daughter' cells. The buds grow into fully matured individuals which eventually break away from the parent organism.
- Sporulation: Some species multiplies by a process of sporulation without encystment during unfavourable conditions.

b. Sexual reproduction:

- Fusion: Gametes fuse together, they may be identical (isogametes) or different (anisogametes).
- Conjugation: In ciliates exchange of nuclie takes place between two individuals.

II- (2) General characters of Coelenterata:

1- **Habitat:** All are aquatic, mostly marine but a few freshwater including the well-known hydras. Individuals may be either solitary or colonial, and sedentary or free-swimming.

2- **Shape:** Body is almost radially symmetrical. Two types of body shape are characteristic, polyp and medusa. Short and slender, extensile projections, called tentacles, encircle the mouth and used for food capture, intake and defence.

3- **Body wall:** The body wall is solid and diploblastic, that is composed of two definite cellular layers epidermis or ectoderm and gastrodermis or endoderm between these two layers is gelatinous non-cellular, intermediate supporting layer, the mesoglea.

4- **Nematocytes:** One or both body layers contain peculiar cells with stinging capsules; called nematocytes, which serve for adhesion, defence and food-capture.

5- **Gastrovascular cavity**: The body wall encloses a single internal cavity lined with gastro-dermis, called enteron or gastrovascular cavity, serves for digestion and distribution of food.

6- **Locomotion:** Movement are due to smooth muscle fibrils in the epithelia.

7- **Digestion:** The digestion occurs extracellular in the gastrovascular cavity which the gland cells of the gastrodermis secrete the digestive juice. Smaller particles of food then engulfed by the gastrodermal cells by means of pseudopodia and flagella and digested within the food vacuoles, where intracellular digestion occurs.

8- **Respiration and excretion:** Respiration and excretion take place by diffusion through the cell membrane to the outside.

9- **Nervous system**: Primitive consisting of a diffuse network of unpolarized nerve cells in the body wall. Sensory organs may be simple or complicated, some with eyespots or statocysts.

10- **Sex:** Some species may be hermaphroditic, but sexes are usually separate.

11- **Reproduction**: Both asexual by budding and regeneration, or sexual by ova and sperms.

12- **Development**: Clevage is holoplastic, development usually indirect, the larva is ciliated and called planula.

13- **Life history**: The life-history illustrates the phenomenon of alteration of generation, in which a sexual free-swimming medusoid generation alternates with an asexual, sessile, usually colonial, polyploidy generation.

14- **Classification:** Coelenterata are classified into three classes:

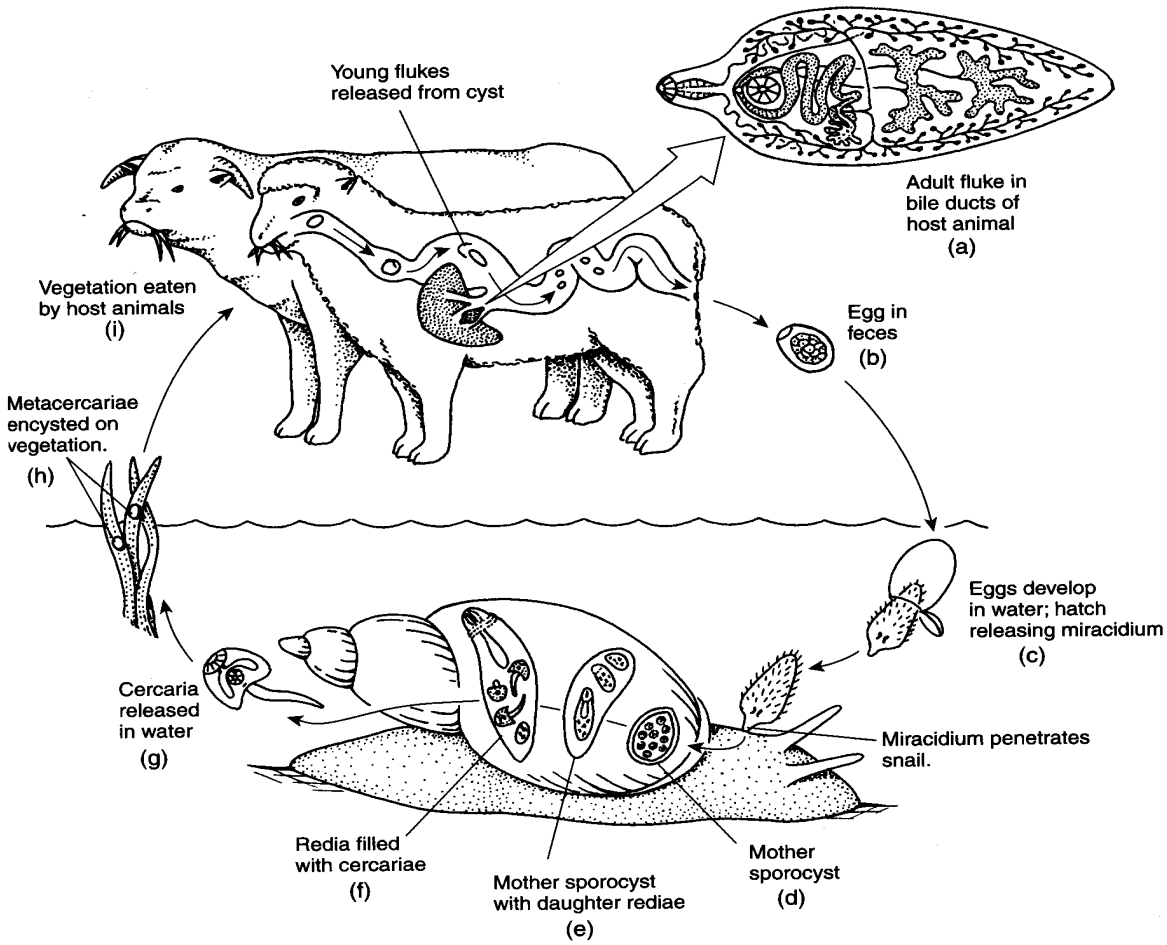
a. Hydrozoa (e.g. *Hydra, Obelia*).

b. Scyphozoa (e.g. *Aurelia* or jellyfishes).

Anthozoa or Actinozoa (e.g. Soft corals, sea anemones and stony corals).

II- (3) Life cycle of *Fasciola*:

Fasciola lives as a parasite in the bile ducts of sheep and cattle. The eggs come from the bile ducts of the host to the intestine, and pass to outside the body with the faeces. The egg is provided with an operculum. At water, the egg hatches giving miracidium which is covered with cilia, provided with anterior proboscis, ald two pigmented spots. The miracidium will penetrate the body of the intermediate host which is a snail called *Lymnaea* where it developes to the sporocyst with germ cells which will give the redia. The redia will give another generation of daughter redia which will give another type of larva called the cercaria. They escape from the birth pore of the redia. The cercariae will encyst on vegetable and plants forming the encysted metacercaria (infective stage). When the metacercaria is eaten by the primary host, the cyst disintigrates and the young fluke is set free in the alimentary canal. It finds its way to the bile duct to the liver where it rapidly grows to the adult form.



II- (4) Life cycle of *Ascaris*:

Adult *Ascaris lumbricoides* worms **(1)** live in the lumen of the small intestine. A female may produce 200,000 eggs each day, which are passed with the feces **(2)** of the host. Ingested unfertilized eggs are not infective, but fertile eggs begin to develop and become infective after 18 days to several weeks **(3)**, depending on environmental conditions (an optimal environment being moist, warm, shaded soil). After infective eggs are swallowed **(4)**, the larvae hatch **(5)**, invade the intestinal mucosa, and are carried via first the portal and then the systemic circulation to the lungs **(6)**. The larvae mature further in the lungs for 10 to 14 days, then penetrate the alveolar walls, ascend the bronchial tree to the throat, and are swallowed **(7)**. Upon reaching the small intestine, they develop into adult worms.