# Phylum protozoa

Examples; amoeba, Euglena, paramecium and trypanosome

Characteristics
1. they are single celled.
2. they are microscopic
3. they reproduce by means of binary fission.
4. they move by pseudopodia (amoeba), cilia (paramecium) or flagella (euglena)
5. reproduce by binary cell division or by cell fission

Characteristics of common protozoa

Characteristics of common protozoa

Amoeba



Feeding
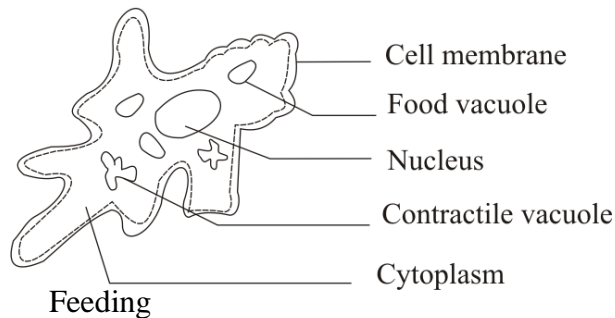
Amoeba feeds by use of cell membrane to engulfs the food particle. The food particle is taken in the cytoplasm and enclosed in food vacuole where it is digested.

Functions of parts of amoeba
    a. **Cell membrane**
       - Protects internal structures
       - Regulates substances that enter or leave the cell
       - Senses external stimuli.

    b. **Nucleus**: controls activities of the cell.

1.

c. **Contractile** vacuole: eliminates excess water from the cell

**Feeding:** by phagocytosis

**Locomotion:** By pseudopodia
**Amoeba** cytoplasm has two layers of **sol and gel**, in which the **sol** layer is enclosed by the **gel** layer. During **locomotion**, the **sol** layer of the cytoplasm flows in the direction of **locomotion**, whereas the **gel** layer is fixed. As the cytoplasm stops moving, the **sol** in the anterior region is converted to **gel**.

Excretion

- Ammonia diffused through the cell membrane
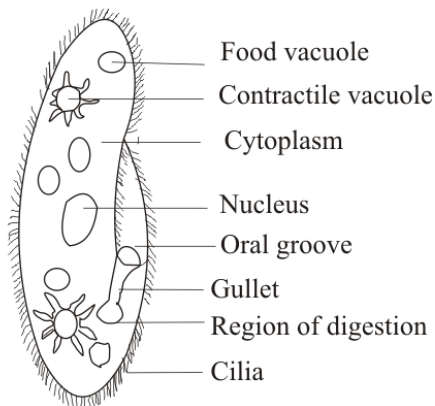- Excess water by contractile vacuole

Reproduction
Binary cell division

Economic importance

- Entamoeba histolytica cause amoebic dysentery
- They feed and control other disease causing organisms e.g. bacteria

Paramecium



Feeding
Cilia push food into the gullet and ingestion takes place only at the end of the gullet. The food vacuole move in a very definite path through the body of the paramecium and egestion takes place at only one part near the region of ingestion.

Movement by cilia
By cilia

Excretion

- Ammonia diffused through the cell membrane
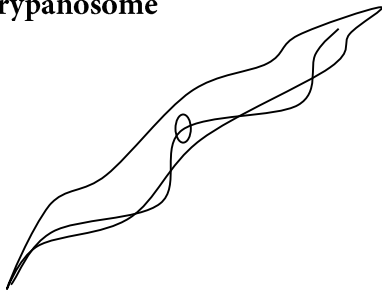- Excess water by contractile vacuole

Reproduction
- Binary cell division

Economic importance
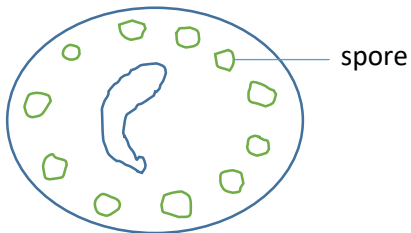
Source of food to other aquatic organism

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**Trypanosome**

Economic impotence
- Is a parasite
- Causes nagana in cattle and sleeping sickness in man

Transmission
By tsetse fly

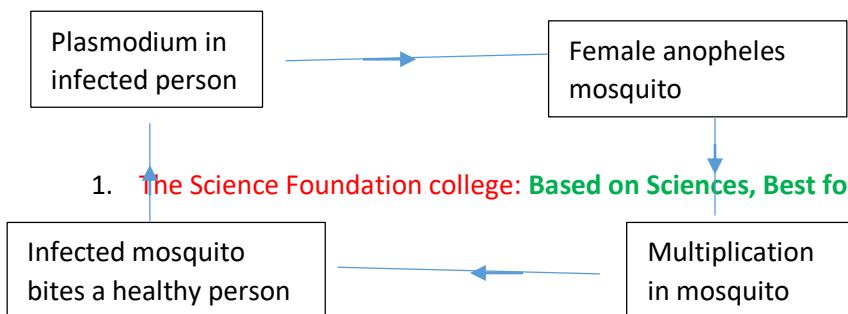Plasmodium

spore

Causes malaria and transmitted by female anopheles mosquito

Life cycle of plasmodia

| Plasmodium in infected person | → | Female anopheles mosquito |

| Infected mosquito bites a healthy person | ← | Multiplication in mosquito |

Revision questions
1. Which one of the following combination of words about amoeba are related
   A. pseudopodia, reproduction
   B. nucleus, movement
   C. contractile vacuole, water
   D. cytoplasm, digestion
2. Which of the following levels of organism in classification interbreed and produce fertile offspring?
   A. class    B. species    C. phylum    D. Kingdom
3. Which of the following protozoa has cilia
   A. Amoeba    B. paramecium    C. Euglena    D. Plasmodium
4. The paramecium takes its food through
   A. The contractile vacuole
   B. Oral roove
   C. General body surface
   D. The food vacuole
5. The contractile vacuoles in the paramecium is mainly for
   A. Elimination of nitrogenous wastes
   B. Elimination of undigested food
   C. Osmoregulation
   D. Eliminated carbon dioxide
6. Amoeba is economically important to man because
   A. It improves soil fertility
   B. It can easily be destroyed
   C. It pollutes man's sources of water
   D. When in man it causes dysentery.
7. Which one of the following is a waste of nitrogenous product of amoeba.
   A. carbon dioxide
   B. urea
   C. ammonia
   D. uric acid
8. Which of the following organisms carries out intracellular digestion
   A. Fungi
   B. Algae
   C. Amoeba
   D. Hookworm
9. D raw and label parts of an amoeba

Answers

1. C     2. B    3. B    4. B    5. C    6. D    7. C    8. C