

B.Sc ZOOLOGY (HONS)

DEGREE I

PAPER 1

PROTOZOA: GENERAL STRUCTURE

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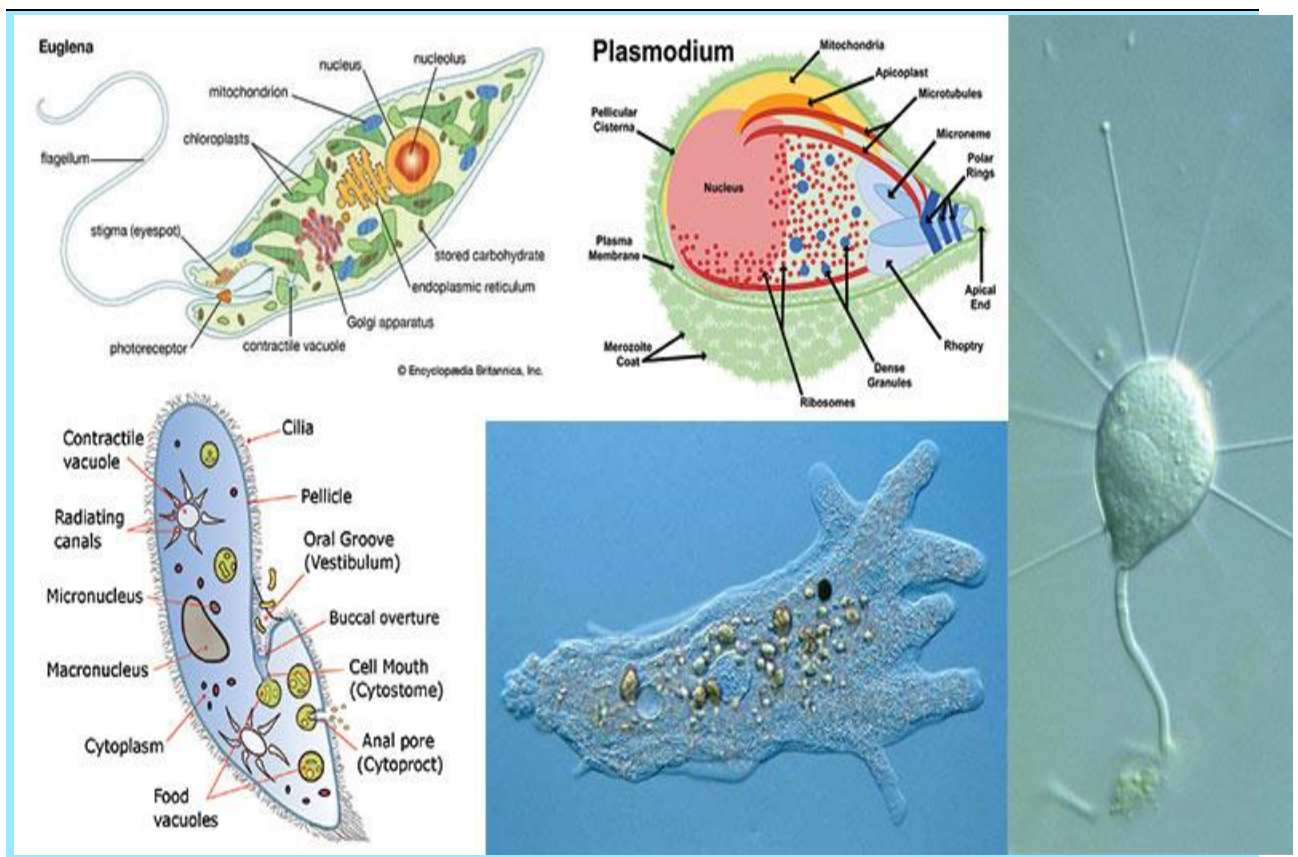
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PROTOZOA: GENERAL STRUCTURE AND ORGINASTION

Protozoa may be defined as “microscopic acellular animalcules existing singly or in colonies, without tissue and organs, having one or more nuclei”.



CHARACTERISTICS OF PHYLUM PROTOZOA

There are about 50,000 known species of Phylum Protozoa.

- Protozoans exhibit mainly two forms of life; **free-living** (aquatic, freshwater, seawater) and **parasitic** (ectoparasites or endoparasites). They are also **commensal** in habitat.
- They are **small**, usually **microscopic**, not visualize without a [microscope](#).
- They are the **simplest** and **primitive** of all animals.
- They have a simple body organization. i.e. with a **protoplasmic grade** of organization.
- The body is **unicellular** (without tissue and organs).
- They have one or more **nuclei** which are monomorphic or dimorphic.
- Body **naked** or bounded by a **pellicle**, but in some forms may be covered with shells and often provided with an internal skeleton.

- They are **solitary** (existing alone/single) or **colonial** (individuals are alike and independent).
- Body **shape variables** may be spherical, oval, elongated or flattened.
- Body **symmetry** either none or bilateral or radial or spherical.
- Body form usually **constant**, varied in some, while changing with environment or age in many.
- Body protoplasm is differentiated into an outer **ectoplasm** and inner **endoplasm**.
- The single-cell body performs all the essential and vital activities, which characterize the animal body; hence only **sub cellular physiological division of labour**.
- Locomotory organs are fingers like **pseudopodia**, whip-like **flagella**, hair-like **cilia** or none.
- Nutrition may be **holozoic** (animal-like), **holophytic** (plant-like), **saprozoic** or **parasitic**.
- Digestion occurs **intracellularly** which takes place inside the food vacuoles.
- Respiration occurs by **diffusion** through the general body surface.
- Excretion occurs through the **general body surface**, but in some forms through a temporary opening in the ectoplasm or through a permanent pore called **cytopyge**.

- Contractile vacuoles perform **osmoregulation** in freshwater forms and also help in removing excretory products.
- Reproduction **asexual** (binary or multiple fission, budding, sporulation) or **sexual** (conjugation (hologamy), game formation (syngamy)).
- The life cycle often complicated with alternation of asexual and sexual phases (**alternation of generation**).
- **Encystment** commonly occurs to resist unfavorable conditions of food, temperature, and moisture, and also helps in dispersal.
- The single-celled individual not differentiated into somatoplasm and germplasm; therefore, exempt from natural death which is the price paid for the body.
- Protozoans exhibit mainly two forms of life; **free-living** (aquatic, freshwater, seawater) and **parasitic** (ectoparasites or endoparasites). They are also **commensal** in habitat.
- Examples: *Euglena*, *Amoeba*, *Plasmodium*, *Paramecium*, *Podophyra*, etc.

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