

CLASSIFICATION OF CELL AS A LIVING UNIT OF AN ORGANISM

- 1). Classification of living things based on the number of cells.
- 2). Classification of living things based on the forms in which living cells exist

1). CLASSIFICATION OF LIVING THINGS BASED ON NUMBER OF CELLS

a, **Unicellular/Acellular**: are organisms with only one cell. Eg- Amoeba, Paramecium, Chlamydomonas and Euglena.

b, **Multicellular**: are organisms with two or more cells. Eg- Volvox, Hydra, Spirogyra, Flowering plants, Fish, Bird and Man.

2). CLASSIFICATION OF LIVING THINGS BASED ON FORMS

a, **Independent/Single and Free-Living Organisms**: possess one cell only and are capable of living freely on their own. They carry out all life processes such as feeding, respiration and so on. Eg- Acellular/Unicellular Organisms.

b, **As a colony**: A colony is the aggregation of independent cells or protists, Eg- Volvox, Pandorina and Sponges. Some of these organisms are made of similar cells which are joined together, in other words, these cells form a loosely arranged association of two or more cells but the cells cannot be differentiated from each other.

c, **As a filament**: Here, identical cells are joined end to end to form unbranched filaments. Each cell functions as an independent living cell but such organisms are multicellular. Eg- Spirogyra, Zygnema, Hydra, Oscillatoria and Oedogonium.

Note: Differences between colonial organisms and filamentous organisms

-**Intercellular wall**: Colonial absent, Filamentous present.

-**Identical Cells**: Colonials form a mass, Filamentous form end-to-end arrangement in linear form.

- Colonial cells are **physiologically dependent** and Filamentous cells are **physiologically independent**.

d, **As a part of a living organisms(Multicellular Organisms)**: The Tissue, The Organ and The System make up the part of a living organisms.

A Tissue is a group of numerous, similar cells arranged together and performing a specific function.

An Organ is a group of similar tissues forming a layer in an organisms which performs a specific function.