

The living world

What is Living?

Living organisms are Self Replicating, Evolving, Self Regulating
Interactive systems capable of responding to external stimuli

Reproduction

- In fungi: Reproduction takes place via- asexual spores.
- In *Yeast & Hydra*- budding.
- In *Planaria*- True regeneration.
- Fragmentation- Fungi, Filamentous Algae, Protonema of mosses
- For unicellular organisms like *Amoeba*, growth and reproduction are synonymous.
- There are some sterile organisms like mule, worker bees, infertile human couples, hence it also cannot be an all inclusive defining characteristic of living organisms.

Metabolism

- An isolated metabolic reaction outside body in test tube is neither living nor non living.
- While metabolism is a defining feature of all living organisms. without exception.
- Isolated reactions are not living things but surely living reactions.
- Cellular organization is also a defining character of living organisms.

Growth

- All living organisms grow.
- Increase in mass and in no. of individuals are twin characteristics of growth.
- Plants grow by cell division (multicellular) throughout their life. Unicellular organisms also grow by cell division.
- In animals growth is restricted up to an age.
- In majority of higher organisms growth and reproduction are mutually exclusive events.
- Growth is not a defining property of living organisms.

Important Points

IMPORTANT POINTS

- All living organisms (past, present and future) are linked to one another by sharing common genetic material but to varying degrees.
- Emergence comes from interaction. Cells interact to make tissues which are more advance. Tissues makes organs which are more advance than tissues and so on.

Consciousness

- Consciousness, a defining property of living organisms.
- Every living organisms respond & sense it's environment. (Plants respond to light, water, temperature, pollutants etc.
- Photoperiod affects reproduction in seasonal breeders, both plants & animals.
- All animals handle chemicals entering into them.
- Only human have self consciousness.
- Coma patients are brain dead but body is responding (heart and lungs get replaced by machines).