

雨「前沿山市で 団 団 ち あ 西田 の 団 (U の) **DEPARTMENT OF EDUCATION (S)** Government of Manipur

<u>CHAPTER – 1</u>

REPRODUCTION IN ORGANISMS

<u>Life Span</u>: The period from birth to the natural death of an organism. It's phases: 1) Juvenile phase/Pre-Reproductive phase.

2)Maturity phase/Reproductive phase.

3)Senescent phase/Post- Reproductive phase.

4)Death phase.

• <u>Reproduction</u>: It is the process by which all living organisms give rise to new organisms similar to themselves. It can be broadly classified into a) asexual and b)sexual reproduction.

a)<u>Asexual reproduction</u>: Offspring arises from single parents without the fusion of gametes.It is common among unicellular organisms and in plants and animals with relatively simple organisations.

Modes of asexual reproduction:

i)Binary fission: A parent celldividesinto two halves and each rapidly grows into an adult.e.g.Amoeba, Paramecium, etc..

ii)Budding: Reproduction through bud.e.g yeast, hydra, etc..

iii) Sporulation: Process of spore formation. It is common in fungi. Spores may be motile(such as zoospore)or non motile(such as conidia).

iv)Vegetative propagation: It is the phenomenon of producing new plants from the vegetative parts such as root, stem, leaf, etc. e.g. Bryophyllum, ginger, etc.

b) Sexual reproduction: Reproduction that involves fusion of male and female gametes by the process of fertilisation. Most of the higher animals reproduce almost entirely by sexual method.

• Events of sexual reproduction may be categorized into:

a)Pre-fertilization events:



It includesi) Gametogenesis:

It is the process of gamete formation. Gametes arehaploid cells.

Sexuality in organisms:

Homothallic/ Bisexual/Hermaphrodite/Monoecious organism:Organism having both male and female sex organ in the same body.

e.g. Cucurbits(plant),Earthworm(animal).

Heterothallic/Unisexual/Dioecious organism:

Male and female sex organ are present on different bodies.

e.g.Papaya(plant),Cockroach(animal).

ii) Gamete transfer:

The transfer of gametes take place through different medium like water, air, wind, etc..

In angiosperms, a special process called pollination ensures transfer of pollen grains to the stigma.

b)Fertilisation:

It is the fusion of two gametes to form a diploid zygote. It is of two types external and internal fertilisation.

c)Post-fertilisation events:

It includes:

i) Zygote formation: Two haploid gametes fuse to form diploid zygote(2n).

ii) Embryogenesis: The process of development of embryo from the zygote.

• In flowering plants, after fertilization, ovary develops into fruit and ovules mature into seed.