ASEXUAL REPRODUCTION

1) Reproduction :-

Reproduction is the process by which living organisms produce new individuals of the same species.

Reproduction is necessary for the survival and increase in the population of a species. If organisms do not reproduce, their population decreases and species will become extinct.

2) Do organisms create carbon copies of themselves ?

The DNA (Deoxyribo nucleic acid) molecules in the chromosomes in the nucleus is responsible for the transfer of characters from the parents to the off springs. During reproduction the reproductive cells produce two copies of the DNA which separate into two cells. The DNA copies will be similar but not identical to each other. So the new individuals have slight variations from their parents. This is the basis for variations and evolution of new species.

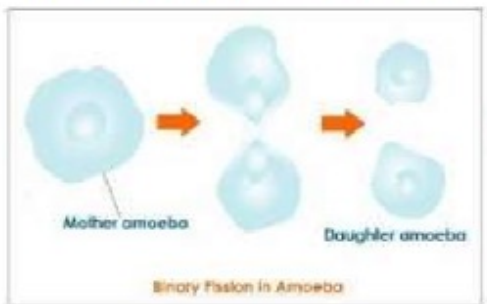
4) Types of reproduction :-

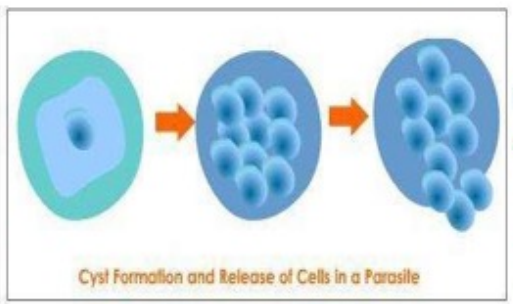
There are two main types of reproduction in living organisms. They are asexual reproduction and sexual reproduction.

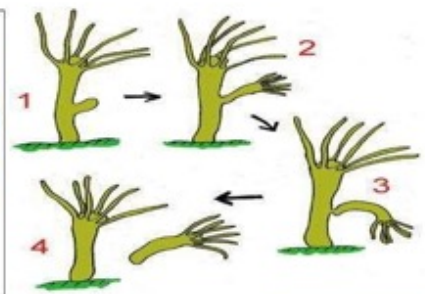
Asexual reproduction :- is reproduction in which new individuals are produced from a single parent.

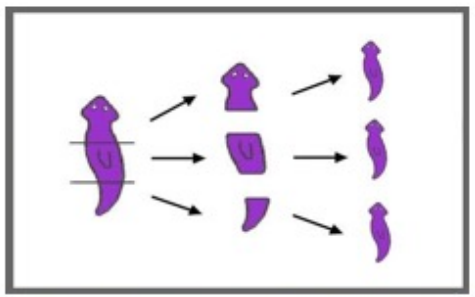
Sexual reproduction :- is reproduction in which two individuals are involved to produce a new individual.

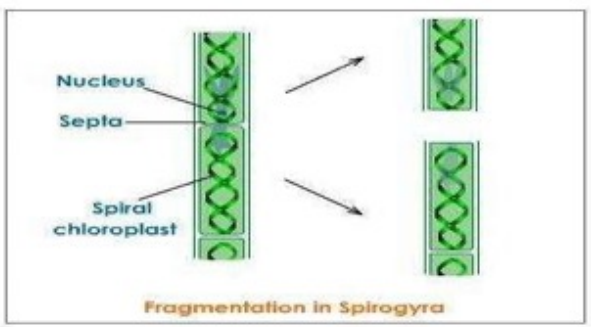
Asexual reproduction is of different types. They are:- fission, budding, regeneration, fragmentation, spore formation, vegetative propagation etc.

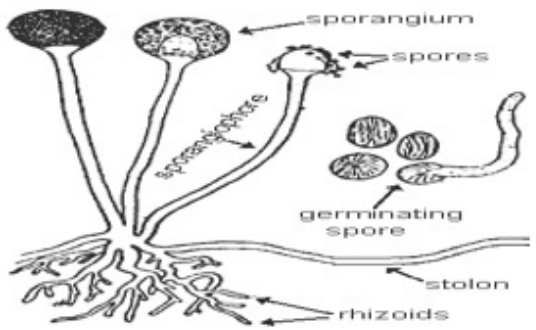










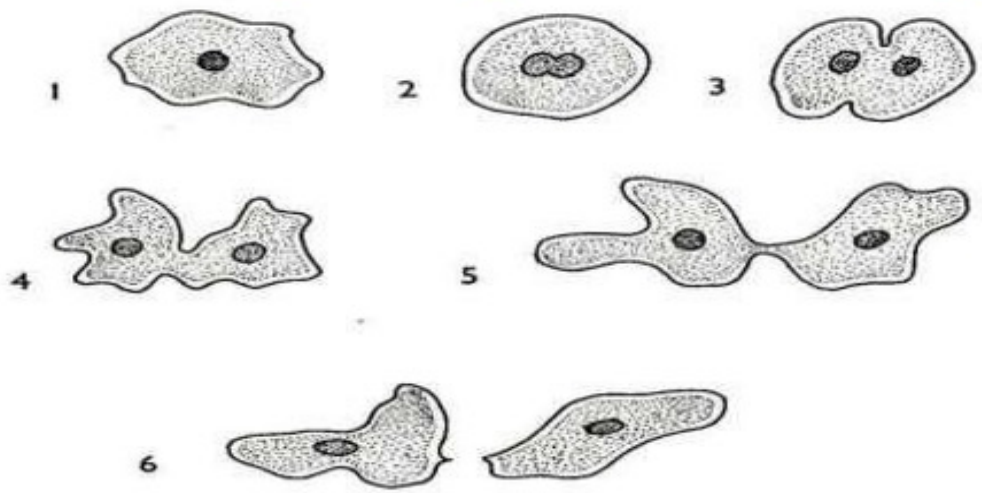


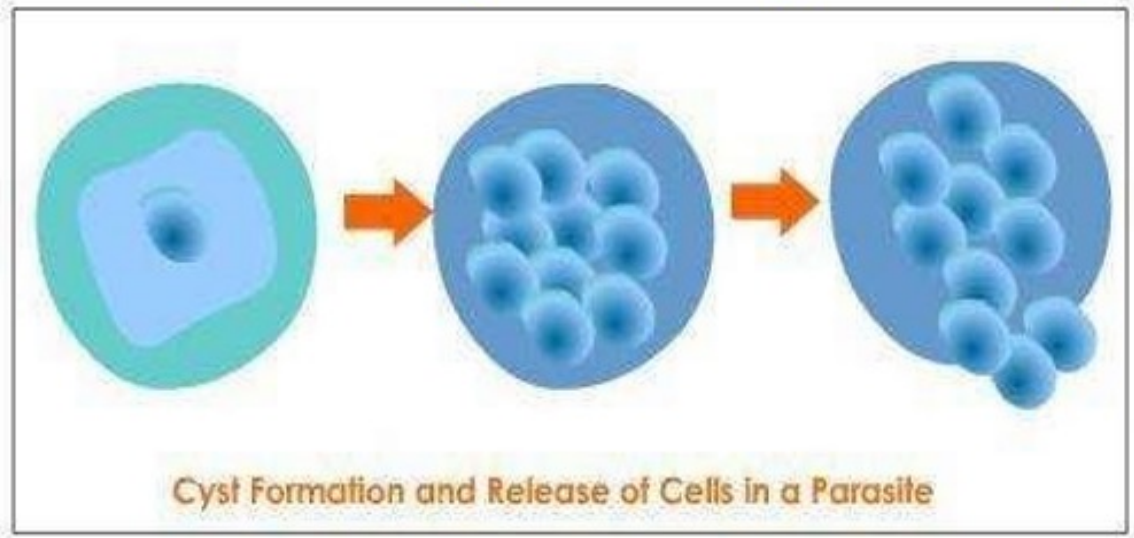
i) Fission :-

Fission is an asexual reproduction by which a unicellular organism divides and forms two or more new individuals. Fission is of two types. They are binary fission and multiple fission.

i)Binary fission :- In this method an organism divides and forms two individuals. First the nucleus divides and forms two nuclei. Then the cytoplasm divides and forms two daughter cells. Eg:- Amoeba, Paramaecium etc.

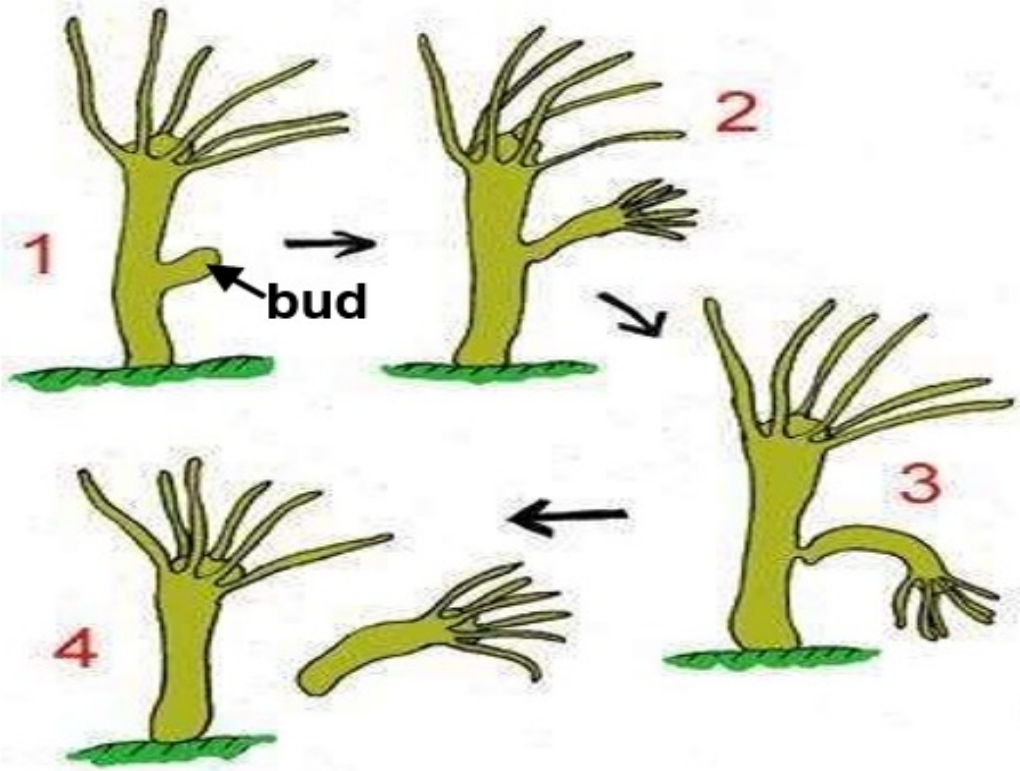
ii) Multiple fission :- In this method one organism divides into many daughter cells. Eg.Plasmodium (Malarial parasite).

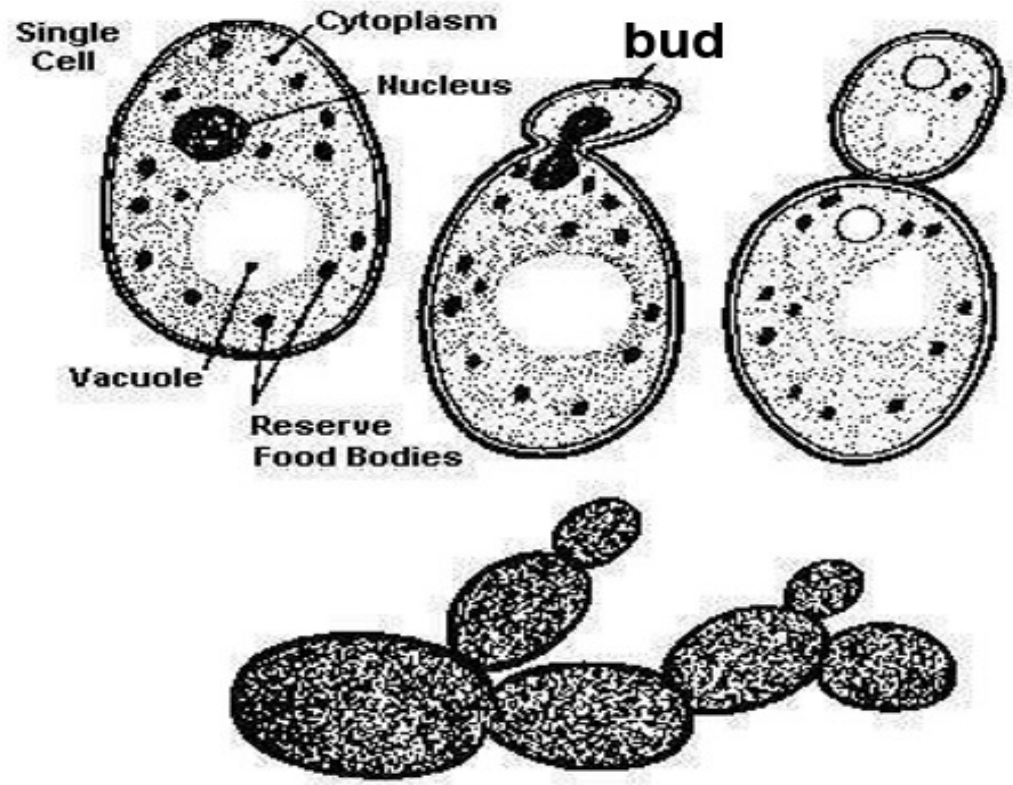




ii) Budding :-

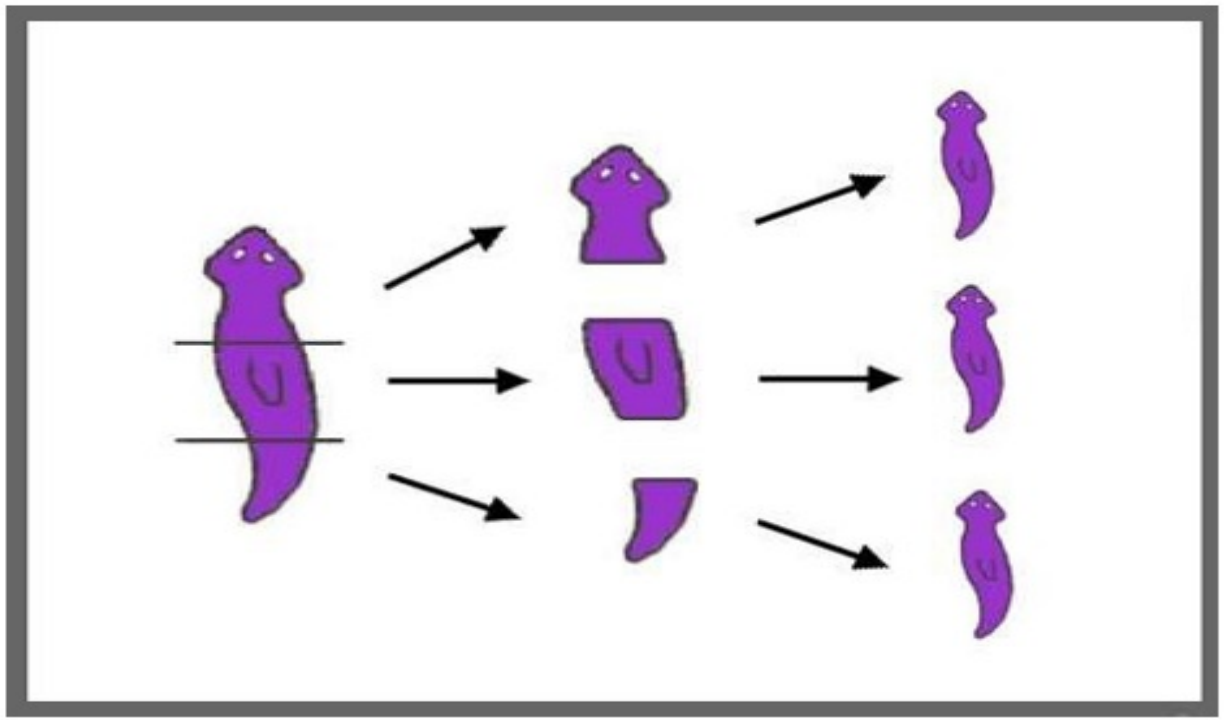
In this method a bud like projection is formed on the body of the organism. The bud then develops into a new individual. It then separates from the parent and forms an independent individual. Eg:- Hydra, Yeast etc.

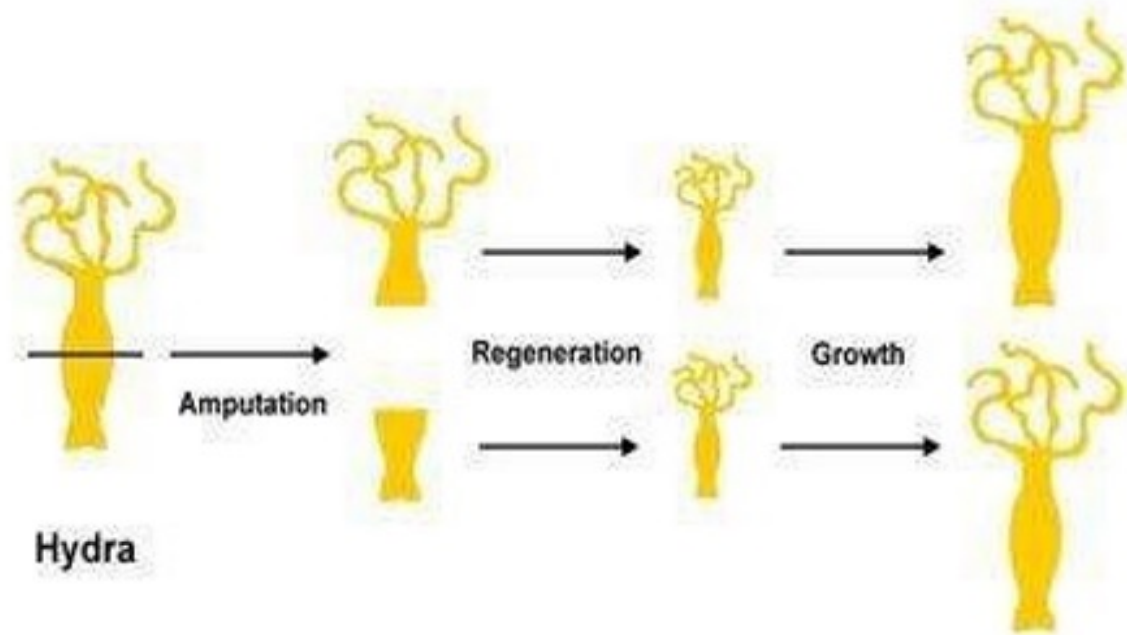




iii) Regeneration :-

In this method a part of the body if the organism if cut or broken can develop into a new individual. Eg :- Hydra, Planaria, Star fish etc.

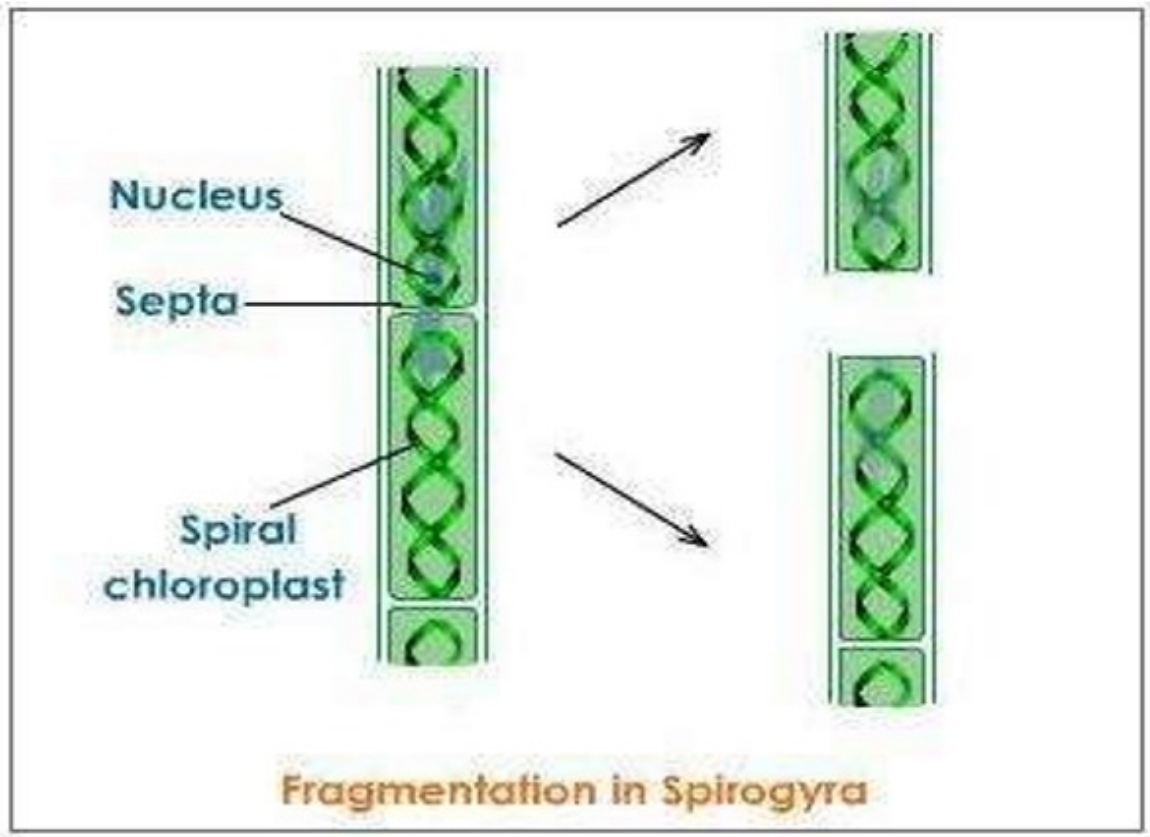




iv) Fragmentation :-

In this method the body of a simple multicellular organism breaks up into smaller pieces on maturation and each fragment develops into new individuals.

Eg :- Spirogyra.

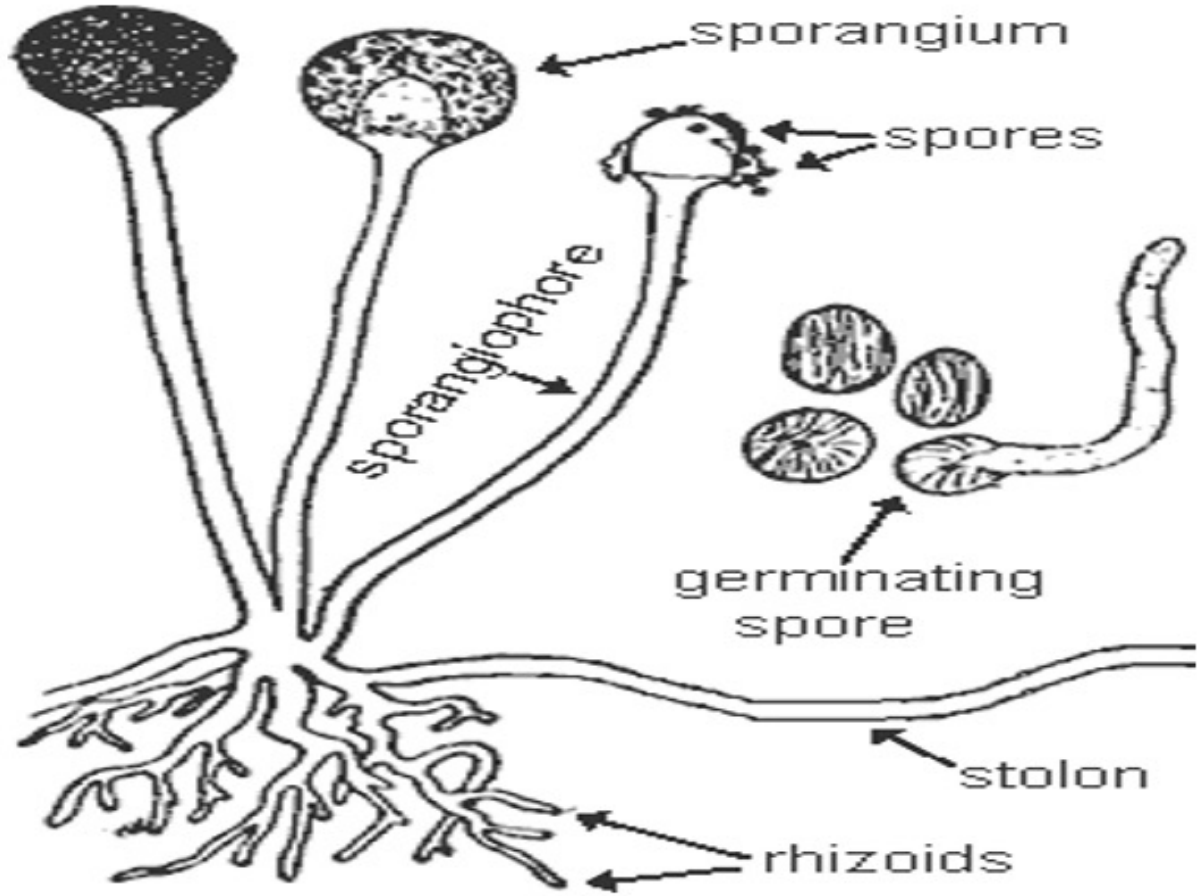


Fragmentation in Spirogyra

v) Spore formation :-

In this method structures called sporangia produce tiny cells called spores. When the spores come in contact with a moist surface, it develops into new individuals.

Eg :- Rhizopus , Mucor, Penicillium etc.



vi) Vegetative propagation :-

In this method new plants are produced from the vegetative parts of the plant like root, stem or leaf. Eg:- from roots – dhalia, sweet potato, from stem – potato, ginger, from leaf – bryophyllum, begonia.

Plants produced by vegetative propagation produce flowers and fruits earlier than those produced from seeds. It also helps in the propagation of plants which do not produce seeds like rose, jasmine banana etc.

Vegetative propagation can also be done artificially by cutting, layering, grafting etc.