BIOLOGY

CLASS NOTES FOR CBSE

Chapter 09. How Do Organisms Reproduce

01. Introduction

The production of new organisms from the existing organisms of the same species is known as reproduction. Reproduction is essential for the survival of a species on the earth. reproduction by human being ensures that the human species will continue to exist on this earth for all time to come. Reproduction gives rise to more organisms with the same basic characteristics as their parents.

02. Types of Reproduction

There are two main methods of reproduction in living organisms :

(a) **Asexual Reproduction**

The production of a new organism from a single parent without the involvement of sex cells (or gametes) is called asexual reproduction In asexual reproduction, a part of the parent organism separates off and grows into a new organism. Thus, in *asexual reproduction. only one parent is needed to produce a new organism.* Some of the example reproduction are : binary fission in Amoeba; budding in Hydria; spore formation in Rhizopus fungus (or bread mould); regeneration in planaria (flatworm) ; fragmentation in spirogyra and vegetative propagation in flowering plants (like rose plants).

(b) **Sexual Reproduction**

The production of a new organism from two parents by making use of their sex cells (or gametes) is called sexual reproduction In sexual reproduction the sex cell of one parent fuses with the sex cell of the other parent to form a new cell called `zygote` This zygote then grows and develops to form a new organism Thus, *in sexual reproduction, two parents are needed to produce a new organism* The humans, fish frogs, hens cats dogs, cows, horses, deer, rabbits, loins and tigers all reproduce by the method of sexual reproduction. Most of the flowering plants also reproduce by sexual reproduction. The basic difference between asexual and sexual reproduction is that only one parent is needed in asexual reproduction whereas two parents are needed in sexual reproduction.

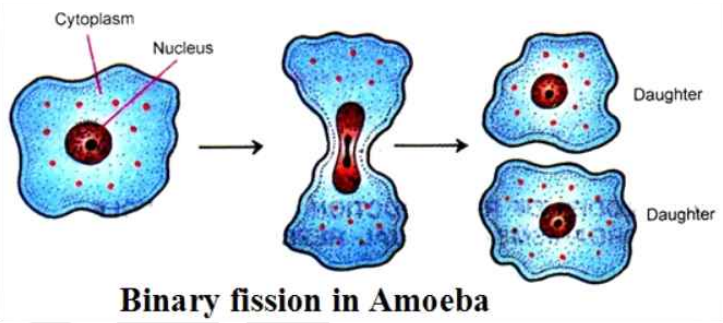
03. Asexual Reproduction

Asexual reproduction taken place by six different methods. These are :

(a) **Fission**

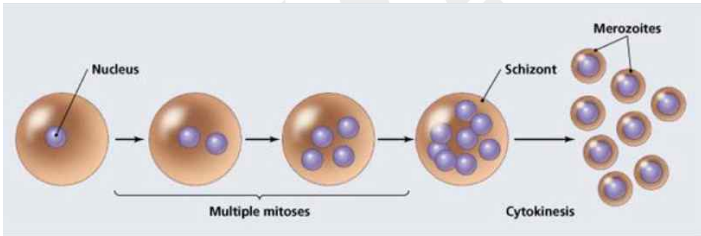
Many single-celled organisms like protozoa and bacteria just split (or break) into two identical halves during cell division, leading to the creation of new organisms. This is called fission *Amoeba, Paramecium, Leishmania* The two types of fission are discussed below :

- **Binary Fission** In binary fission, the parent organism splits (or divides) to form two new organisms.



Binary fission in Amoeba

- **Multiple Fission :** In multiple fission, the parent organism splits (or divides) to form many new organisms at the same time. Sometimes (particularly during unfavourable conditions), a cyst or protective wall is formed around the cell of a single-celled organism (*like that of plasmodium*)



(b) **Budding :** Budding is an asexual method of reproduction. In budding, a small part of the body of the parent organism grows out as a `bud` Which then detaches and becomes a new organism. The asexual reproduction by budding is observed in *Hydra* and yeast.