

Reproduction in Animals Notes

Reproduction is essential for the continuation of a species.

➤ **Modes of Reproduction:**

There are two modes by which animals reproduce.

- i) Sexual reproduction
- ii) Asexual reproduction

- **Sexual reproduction:** The process of reproduction which begins with the fusion of male and female gametes.
- Both sexes that is males and females have different reproductive parts or organs.
- Zygote: the male gamete and female gamete on fusion produce the zygote.
- Formation of zygote is the first step in development of a new individual

a. **Male Reproductive Organs:**

I. It comprises of

- a) Pair of testes: They produce the male gametes called the sperm. Millions of sperms are produced by the testes.
- b) Two sperm ducts: These carry the sperm from the testes.
- c) Sperms: They are very small in size, each has a head, a middle piece and a tail. It is a single cell representing the male gamete.

b. **Female Reproductive Organs:**

II. It comprises of

- a) A pair of ovaries: Ovaries produces the female gametes called ova or the eggs
- b) Oviducts (fallopian tubes): a single matured egg is released into the oviduct by one of the ovaries every month
- c) The uterus: Development of the baby takes place in the uterus.

c. **Fertilization:**

- Fusion of the nuclei of egg and the sperm nuclei to form a single nucleus is called fertilization.
- It results in formation of the Zygote.
- **Internal fertilization:** Fertilization which takes place inside the female body is called internal fertilization. It occurs in many animals including humans, cows, dogs and hens.
- **Internal fertilization in Hens**
 - After fertilization, the zygote divides repeatedly and travels down the oviduct.
 - During this time many protective layers are formed around the zygote E.g., The hard shell in a hen's egg.
 - After this the hen finally lays the egg.
 - The embryo takes about 3 weeks to develop into a chick.
 - The hen sits on the eggs to provide sufficient warmth to the egg.

- External fertilization: Fertilization in which the fusion of a male and a female gamete takes place outside the body of the female is called external fertilization. Examples include aquatic animals such as fish, starfish, etc.
- The embryos continue to grow within their egg coverings and after the embryos develop, the eggs hatch. E.g., Numerous tadpoles swimming in ponds and streams.

➤ **Test tube babies:**

1. Due to blocked oviducts some women are unable to bear babies as the sperms can't reach the egg.
2. By the process of IVF or *in vitro fertilization*, doctor collect freshly released egg and sperms and keep them together for a few hours.
3. If fertilization takes place, then the zygote is allowed to develop and is placed in the mother's uterus for the baby's development.
4. Babies born through this technique are called test-tube babies.

d. Development of Embryo:

1. Zygote generate a number of cells following a series of cell division
2. These cells group together for performing specific functions into tissues and then organs. The structure they develop is called the embryo,
3. The body parts such as hands, legs, head, eyes, ears etc. develop from the embryo.
4. Foetus: The stage of the embryo in which all the body parts can be identified is called a foetus.

e. Viviparous and Oviparous Animals:

1. The animals which give birth to young ones are called viviparous animals.
2. The animals which lay eggs are called oviparous animals

f. Development of Young Ones to Adults:

- 1.) The new organism which is born continue to grow till they become adults.
- 2.) The young ones may look very different from the adults. E.g., there are three distinct stages, in frog development that is, egg ® tadpole (larva) ® adult.
- 3.) Metamorphosis: The transformation of the larva into an adult through drastic changes is called metamorphosis
- 4.) In case of human babies, the infant resembles the adult.

➤ **Asexual Reproduction**

- In this type of reproduction there is no fusion between the male and the female gametes.

➤ **Hydra:**

- 1.) It reproduces by budding
- 2.) In each hydra, there may be one or more buds.
- 3.) These buds develop into new individuals as on outgrowth from the parent.

➤ **Amoebae:**

- 1.) It reproduces by binary fission

- 2.) The process of reproduction starts with the division of its nucleus into two nuclei followed by division cytoplasm.
 - 3.) Two amoebae are produced from one parent amoeba.
- Cloning: It is the production of an exact copy of a cell, any other living part, or a complete organism