

**Q. What is reproduction? Why it is an essential life process?**

Or, explain the importance of reproduction in organism.

Answer: Reproduction is process of producing new individual. Living organism produce young ones of their own kind by the process of reproduction.

Reproduction is essential for the continuation of life from one generation to next generation. It ensures the continuation of similar kinds of individuals, generation after generation.

**Q. What are the different modes by which animals reproduce?**

Answer: there are two modes by which animals reproduce. These are: (i) Asexual reproduction and (ii) Sexual reproduction

**Q. Describe asexual reproduction**

Answer: Asexual reproduction is kind of reproduction in which single individual new individual of its own kinds. The off spring produced by asexual reproduction are similar to parents and are called clones very small animals like hydra and microscopic organisms like amoeba.

**Q. How new individuals developed in hydra?**

Answer: Hydra reproduces by budding. In each hydra, there may be one or more bulges. These bulges are called **buds**. These buds detached from parent body and develop into new individuals.

**Q. How new individuals developed in amoeba?**

Answer: Amoeba reproduces by binary fusion. Amoeba splits its body into two, each part receiving a nucleus and two new amoebae are produced.

**Q. Write some basic feature of a sexual Reproduction?**

Answer: Asexual Reproduction Basic features

- (i) Only one parent organism is involved.
- (ii) New organisms are genetically identical to the parent(clones)
- (iii) No gamete formation
- (iv) Cell division involved – mitotic

**Q. Differentiate between (a) Binary fission and Multiple fission (b) fission and budding (c) fission and fragmentation**

Answer:

Differences between binary fission and multiple fission

- (a) A single parent organism divides into two new organisms. e.g. Amoeba, Paramecium, Euglena
- (b) Only single parent organism divides into many new organisms. eg. Plasmodium.

Differences between fission and budding

Fission

- (a) A single parent organism divides into two or many new organisms.
- (b) Parental identity is lost
- (c) Amoeba, Paramecium, Plasmodium

Budding

- (a) Parent organism forms a bud (outgrowth), it gets separated & form a new organism.
- (b) Parental identity is maintained
- (c) Hydra, Yeast ( Unicellular Fungus)

### Differences between fission & fragmentation

#### Fission

- (i) It occurs in unicellular organisms
- (ii) The nucleus & cytoplasm of the parent cell divides & produce two daughter cells.
- (iii) The daughter cells formed are equal in size. (iv) For example : Amoeba, Euglena

#### Fragmentation

- (i) It occurs in multicellular organisms.
- (ii) The organism breaks into two or more parts & each part grows into a new organism.
- (iii) The new organisms formed are usually unequal in size.
- (iv) for example : Spirogyra

### **Q. Describe about cloning?**

Answer: Cloning is the production of an exact copy of a cell, any other living part, or a complete organism. Cloning of an animal was successfully performed for the first time by Ian Wilmut and his colleagues at the Roslin Institute in Edinburgh, Scotland. They cloned successfully a sheep named Dolly . Dolly was born on 5th July 1996 and was the first mammal to be cloned.

During the process of cloning Dolly, a cell was collected from the mammary gland of a female Finn Dorsett sheep

### **Q. Describe the process of fertilization in human body?**

Answer: **Fertilization** is the process of the fusion of a sperm (male gamete) and an ovum (female gamete). During fertilization, the nuclei of the sperm and the egg fuse to form a single nucleus. This result in the formation of a fertilized egg called **zygote**. Zygote develops into an embryo. The embryo continues to develop in the uterus body parts such as hands, legs, head, eyes, ears, etc. The stage of the embryo in which all the body parts can be identified is called a **foetus** . When the development of the foetus is complete, the mother gives birth to the baby.

### **Q. What are different kinds of fertilization?**

**Answer:** Fertilization which takes place inside the female body is called **internal fertilization**. Internal fertilization occurs in many animals including humans, cows, dogs and hens.

The fusion of a male and a female gamete takes place outside the body of the female is called **external fertilization**. It is very common in aquatic animals such as fish, starfish, etc.

### **Q. Differentiate between Viviparous and Oviparous Animals?**

Answer: The animals which give birth to young ones are called viviparous animals. eg. cat ,dog, lion etc. Those animals which lay eggs are called oviparous animals.e.g. insect , fish ,frog, and reptile.

### **Q. What is metamorphosis?**

Answer: Metamorphosis is the process of the transformation of larva into an adult through drastic change. For example pupa into adult butterfly.

Metamorphosis does not occur in viviparous animals because the young one resembles the adult at the time of birth.

**Q. What do you mean by brooding?**

Answer: In the hen, new individual hens [chick] develop from hen's egg in about 3 weeks. Hen provides sufficient warmth to the egg to develop by sitting over it. This is called brooding.

**Q. How does an embryo obtain nutrition for grow and develop its body parts?**

Answer: an embryo obtains nutrition for grow and develop its body parts from mother's blood through placenta. The embryo attached to the wall of uterus by placenta.

**Q. What is test-tube baby?**

Answer: Oviducts of some women are blocked due to which these women are not be able to bear babies. In these type of cases IVF or in vitro fertilization is done in which freshly released egg and sperms are kept them together for a few hours.

Zygote is allowed to develop for about a week and then it placed in the mother's uterus and the baby is born and this technique is called as test-tube babies.

Q. What is implantation?

Answer: The close attachment of the embryo with the walls of uterus is called implantation.

Q. What is placenta?

Answer: A special tissue between the uterus wall and the embryo (foetus) that fulfils the nutritional, respiratory and excretory needs of the foetus from mother's body is called placenta.

Q. What is the function of amniotic fluid ?

Answer: The function of amniotic fluid is to protect the foetus against temperature changes and mechanical shocks.

Q. What is gestation?

Answer: The development of the foetus inside the uterus till birth is called gestation.

Q. What is parturition?

Answer: The birth of a fully developed foetus after the completion of gestation period is called parturition.

**Q. What are the differences between development of young ones in frogs and in humans?**

Ans:

Development in frogs	Development in humans
It takes place outside the body of the female.	It takes place inside the body of the female.
Stages in the development are egg, larva and adult.	Stages in the development are foetus, young one and adult.
The young one is different from the adult.	The young one is similar to the adult.

**Q. Why does a child show some characteristics of the father and some of the mother?**

Answer: The process of fertilization is the meeting of an egg cell from the mother and a sperm cell from the father. So, the new individual inherits some characteristics from the mother and some from the father.

**Q. Why do fish and frogs lay eggs in hundreds whereas a hen lays only one egg at a time?**

Answer: This is because the eggs and sperms get exposed to water movement, wind and rainfall. Also, there are other animals in the pond which may feed on eggs. Thus, production of large number of eggs and sperms is necessary to ensure fertilization of at least a few of them.

Unlike hen's egg, frog's egg is not covered by a shell and it is comparatively very delicate. A layer of jelly holds the eggs together and provides protection to the eggs

**Q. Fill in the blanks:**

- (a) Male and female have different reproductive part testes and Ovaries respectively.
- (b) Each parent produce special sex cell called gamete.
- (c) The gamete produced by male and female is sperm and egg (Ovum) respectively.
- (d) In most aquatic animal, external fertilization takes place.
- (e) On reaching the uterus, the embryo attached to the wall of uterus by placenta. This is called implantation.
- (f) In human fertilization of sperm and ovum takes place in the interior part of Oviduct
- (g) The process of transformation of larva or tadpole into an adult through drastic changes is called metamorphosis.

**Q. Name the following:**

- (a) The organ which produces sperm
- (b) The organ which produces egg
- (c) The place where embryo develops in human female
- (d) The organ in reproductive system which receives the sperm
- (e) A muscular tissue which delivers the sperm into vagina of female
- (f) Name the method of asexual reproduction in which individuals develops from the bud.
- (g) Name the process of reproduction in Amoeba.

Answer:

- (a) Testes
- (b) Ovaries
- (c) Uterus
- (d) Vagina
- (e) Penis
- (f) Budding
- (g) Binary fission

Next: and Endocrine system