

## CHAPTER -6

### REPRODUCTION IN ANIMALS

#### EXERCISES

##### 1 Mark Questions

**Q1: Explain the importance of reproduction in organisms.**

**Answer:** Reproduction is a vital phenomenon on this planet earth which is essential for existence and continuity of life and species on it, generation after generation.

**Q2: In which female reproductive organ does the embryo get embedded?**

**Answer:** Embedding of the embryo takes place in the wall of the uterus.

**Q3: What are sperms?**

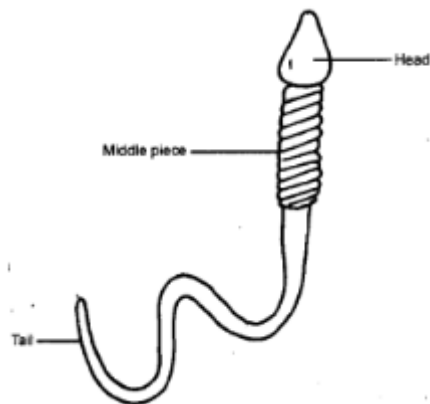
**Answer:** The male gametes produced by the testis are known as sperms.

**Q4: Give the structure of sperm.**

**Answer:** A sperm has a head, a middle piece and a tail.

**Q5: Draw a labeled diagram of sperm**

**Answer:**



**Q6: What type of fertilization takes place in humans and dogs ?**

**Answer:** Internal fertilization.

**Q7: What is an embryo?**

**Answer:** The zygote divides repeatedly to form an embryo.

**Q8: What name is given to animals which lay their eggs ?**

**Answer:** Oviparous animals.

**Q9: Define budding.**

**Answer:** Budding is the type of asexual reproduction in which new individuals develop from the buds.

**Q10: Name the method by which Amoeba reproduces.**

**Answer:** Amoeba reproduces by binary fission.

## 2 Mark Questions

**Q1: Describe the process of fertilization in human beings.**

**Answer:** Fertilization is defined as the process in which there is a fusion of male gamete and female gamete.

- The male gametes or sperms are released from the male reproductive organ called the penis.
- The sperms release and enter the female body through the vagina.
- From the vagina, sperms travel through the fallopian tubes, where they meet the eggs.
- From there on, the process of fertilization takes place in the fallopian tube.
- The male gamete cell (sperm) and female gamete cell (egg) fuse together to form a zygote.
- The zygote divides rapidly to form a group of cells called a morula, which becomes the embryo after approximately five days. The fetus is present for about eight weeks after fertilization.

**Q2: What is metamorphosis? Give examples.**

**Answer:** The drastic change which takes place during the development of an animal is called metamorphosis. Silkworm and frog undergo metamorphosis.

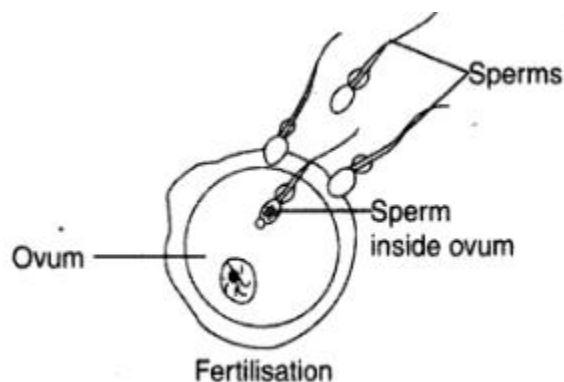
**Q3: Differentiate between internal fertilization and external fertilization.**

**Answer:**

<b>Internal Fertilization</b>	<b>External Fertilization</b>
(a) Fertilizations that takes place inside the female body. (b) Takes place in humans, cows, hens and dogs.	(a) Fertilizations that takes place outside the female body. (b) Takes place in frogs, fishes and starfish.

**Q4: Draw a diagram to show fertilization in humans.**

**Answer:**



**Q5: The different stages of the life cycle of mosquito and silk moth are given below. Arrange them in proper sequence.**

1. Mosquito – Pupa —> Eggs —> Larva —> Adult.
2. Silk moth – Larvae —> Zygote —> Cocoon —> Adult —> Caterpillar.

**Answer:** Eggs —> Larva —> Pupa —> Adult

Zygote —> Larvae —> Caterpillar —> Cocoon —> Adult.

**Q6: What are hermaphrodite animals and plants? Give examples.**

**Answer:** Organisms bearing both male and female sex organs on the same body are known as hermaphrodite animals. Example, pea plant, earthworms.

## **5 Mark Questions**

**Q1: Give the differences between a zygote and a fetus.**

**Answer:**

**Zygote:**

- It is the earliest stage of development
- It is formed by the fusion of male and female gametes
- It is a single cell
- The zygote divides several times to form an embryo
- The zygote normally lasts a week and then develops into its next stage.

**Foetus**

- It is the last developmental stage of an organism
- The stage of the embryo shows all the main recognizable body parts of a mature organism.
- The fetus stage occurs after the embryo stage
- Foetus mainly undergoes internal development

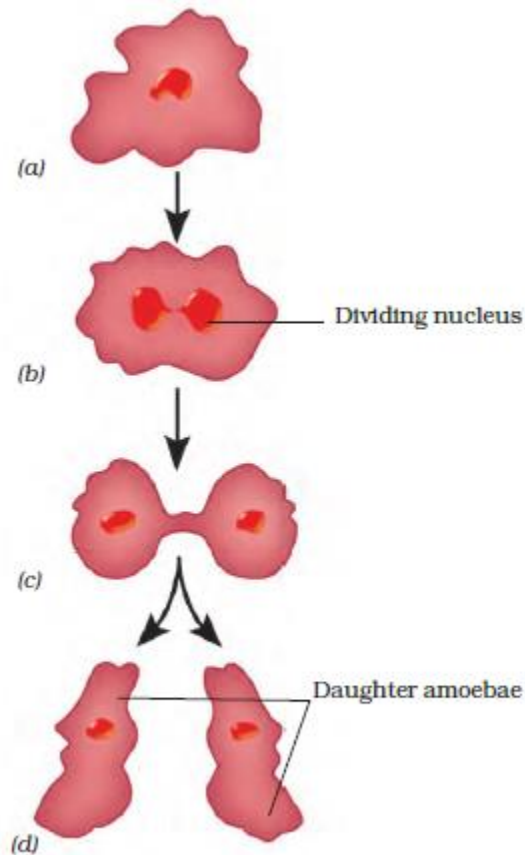
**Q2: Define asexual reproduction. Describe two methods of asexual reproduction in animals.**

**Answer:** In this type of reproduction, the offspring arises from a single organism without the fusion of male and female gametes. It never changes the number of chromosomes.

**Binary fission in amoeba**

- It is a kind of asexual reproduction in which one cell divides into two halves.
- It is a unicellular organism that has a cell membrane, cell wall and cytoplasm.
- The division of the cell can take place on any plane.

- In this process, the nucleus of the amoeba first divides to form two daughter nuclei by the process called Karyokinesis.
- Finally, the division of the body into two halves having a nucleus takes

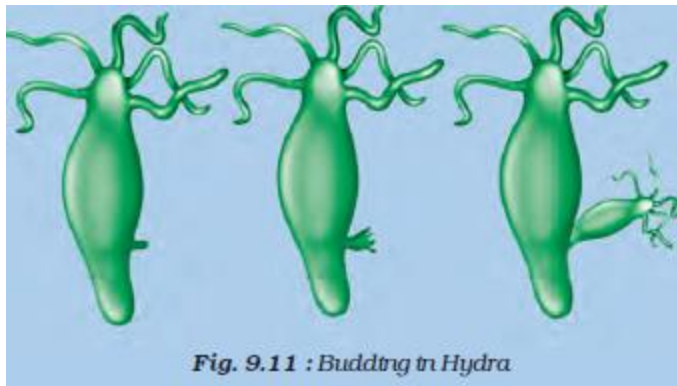


**Fig. 9.12 : Binary fission in Amoeba**

place.

### **Budding in hydra**

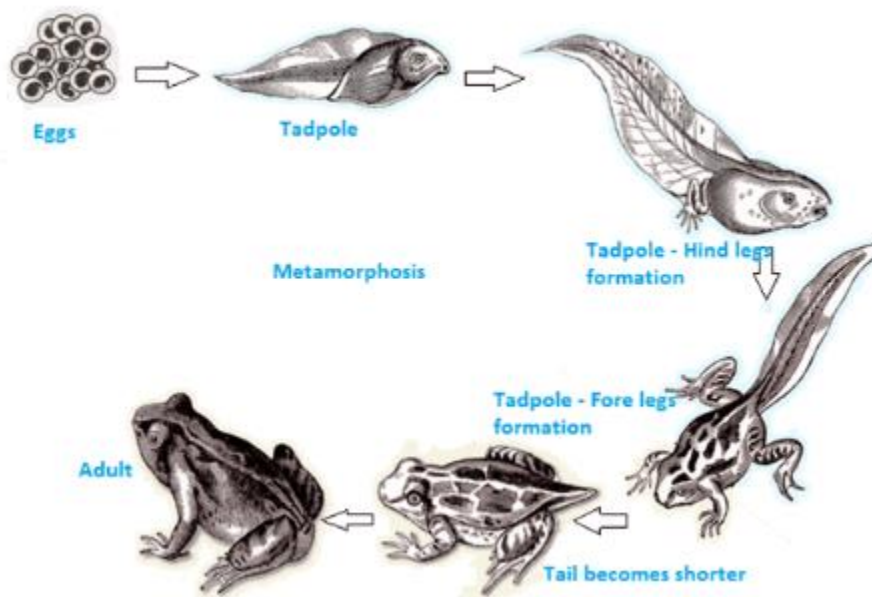
- Organisms, such as hydra, use regenerative cells for reproduction in the process of budding.
- The first step is the formation of buds, which develops as a small outgrowth on the parent's body.
- As the bud enlarges, it receives the characteristics of the parent organism.
- Once it is developed, it may be detached from the parent body and develop into a new individual.
- In some rare cases, the buds may not be detached, forming interconnected buds.
- There are also methods like fragmentation, multiple fission etc.



**Q3: In which female reproductive organ does the embryo get embedded?**

**Answer:** It is defined as the process in which an animal's body structure abruptly changes through cell growth and differentiation.

- It is a biological process.
- Examples of this kind are frogs and insects.



**The life cycle of a frog:**

The tadpole emerging from the egg will have gills, tail, etc.

They can swim easily in water.

It undergoes abrupt changes and develops into a mature frog.

**Q4: Explain binary fission in Amoeba with the help of diagram**

**Answer:** Amoeba is a unicellular organism; the nucleus of the amoeba gradually divides into two nuclei. Then the cytoplasm also divides and each part gets one nucleus. This is known as binary fission and it asexual reproduction.

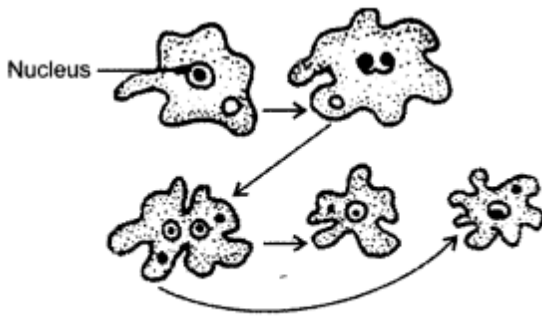
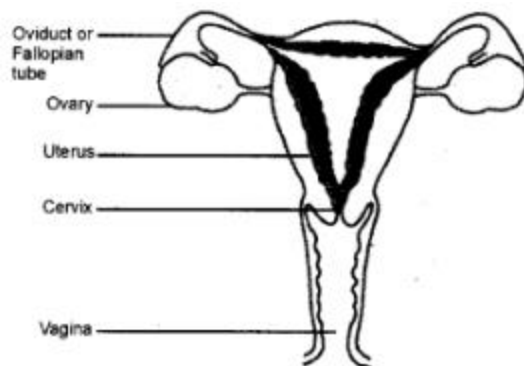


Fig. Binary fission in *Amoeba*

**Q5: Draw a labeled diagram to show the female reproductive system?**

**Answer:**



Human - Female reproductive system



## Fill in the blanks

1. The process of reproduction takes place only when organisms reach the \_\_\_\_\_.

**Answer:** Maturity

2. \_\_\_\_\_ is the process by which a new organism developed from an outgrowth or bud

**Answer:** Budding

3. The organisms that produce male and female gametes in the same body are called \_\_\_\_\_.

**Answer:** Hermaphrodites

4. \_\_\_\_\_ is the process in which the male and female gametes fused together to develop a new organism.

**Answer:** Fertilization

5. \_\_\_\_\_ is a technique used to develop zygote by injecting male sperms inside the female body externally.

**Answer:** In-Vitro Fertilization (IVF)

## **Multiple Choice Questions**

### **1. Multiple fission is observed in**

- (a) Amoeba
- (b) Bacteria
- (c) Hydra
- (d) Plasmodium

**Answer:** (d) Plasmodium

### **2. Yeast reproduces by**

- (a) Sexual reproduction
- (b) asexual reproduction
- (c) parthenogenesis
- (d) none of these.

**Answer:** (b) asexual reproduction

### **3. External fertilization and external development takes place in**

- (a) Hen
- (b) frog
- (c) elephant
- (d) human beings

**Answer:** (b) frog

### **4. Testes are found in**

- (a) Males only
- (b) females only
- (c) both males and females
- (d) none of these

**Answer:** (a) Males only

**5. When the embryo can be identified with body parts, it is known as**

- (a) Zygote
- (b) fetus
- (c) infant
- (d) egg

**Answer:** (b) fetus

**6. Metamorphosis can be observed in**

- (a) Tadpole
- (b) earthworm
- (c) hen
- (d) Hydra

**Answer:** (a) tadpole

**7. Internal fertilization and internal development takes place in**

- (a) hen
- (b) frogs
- (c) earthworm
- (d) elephants

**Answer:** (d) elephants

**8. Ovaries are present in**

- (a) male's
- (b) females
- (c) both males and females
- (d) none of these

**Answer:** (b) females

## PUZZLE

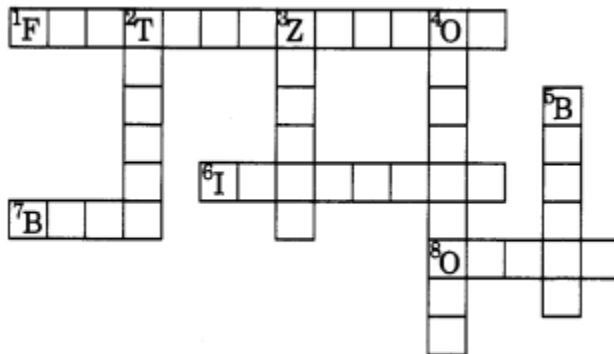
Complete the crossword puzzle using the hints given below.

**Across**

1. The process of the fusion of the gametes.
6. The type of fertilization in a hen.
7. The term used for bulges observed on the sides of the body of Hydra.
8. Eggs are produced here.

**Down**

2. Sperms are produced in these male reproductive organs
3. Another term for the fertilized egg.
4. These animals lay eggs.
5. A type of fission in Amoeba.

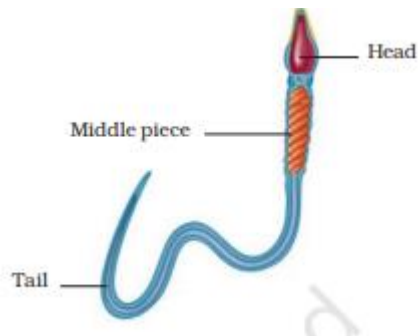


Answer:

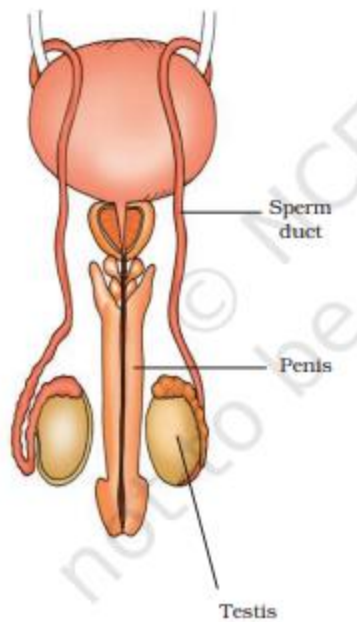


## DIAGRAMS:

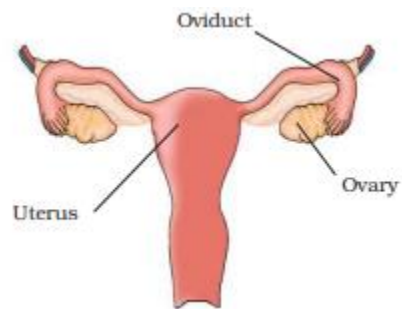
### **Human sperm:**



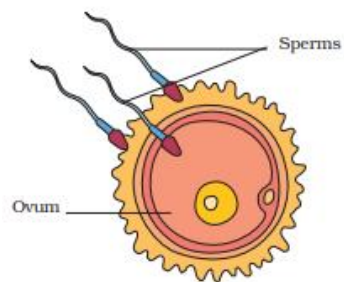
### **Male reproductive organs in humans**



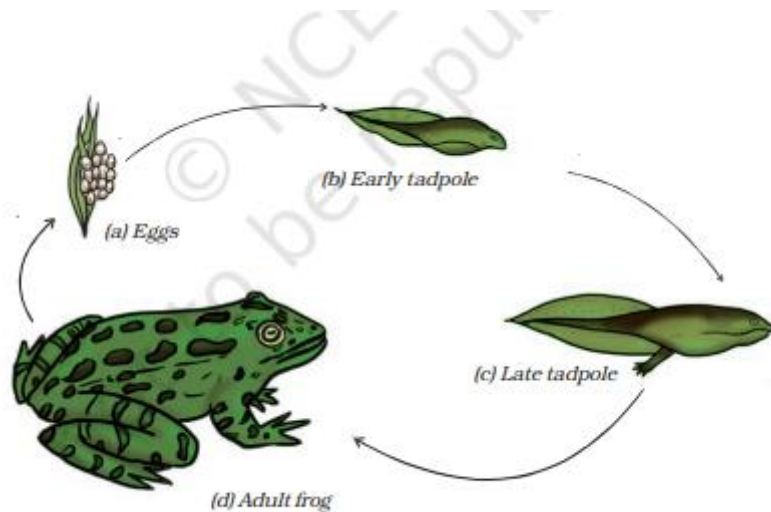
## Female reproductive organs in humans



## Fertilization



## Life cycle of frog



## SUMMARY

**Reproduction** is a process in which the organisms produce the young ones of their own kind.

- There are two modes by which animals reproduce. These are: (i) Sexual reproduction, and (ii) Asexual reproduction.

### **Sexual Reproduction**

- Reproduction resulting from the fusion of male and female gametes is called sexual reproduction.
- The reproductive organs in the female include ovaries, oviducts and uterus.
- The reproductive organs in male include testes, sperm ducts and penis.
- The ovary produces female gametes called ova and the testes produce male gametes called sperms.
- The fusion of ovum and sperm is called fertilization. The fertilized egg is called a zygote.
- Fertilization that takes place inside the female body is called internal fertilization. This is observed in human beings and other animals such as hens, cows and dogs.
- Fertilization that takes place outside the female body is called external fertilization. This is observed in frogs, fish, starfish, etc.
- The zygote divides repeatedly to give rise to an embryo.
- The embryo gets embedded in the wall of the uterus for further development.
- The stage of the embryo in which all the body parts are identifiable is called fetus.
- Animals such as human beings, cows and dogs which give birth to young ones are called viviparous animals.
- **Oviparous Animals:** Animals that lay eggs are called oviparous animals, e.g., frogs, lizards, butterflies, etc.
- The transformation of the larva into adult through drastic changes is called metamorphosis.

### **Asexual Reproduction**

- The type of reproduction in which only a single parent is involved is called asexual reproduction.
- In hydra, new individuals develop from buds. This method of asexual reproduction is called budding.
- Amoeba reproduces by dividing itself into two. This type of asexual reproduction is called binary fission.