

## 9. Reproduction class 8 Study material Living science

A. MULTIPLE-CHOICE QUESTIONS: Choose the most appropriate answer.

- Which of these are male reproductive organ  
a. sperm                      b. ova                      c. testes ✓                      d. ovaries
- Which of the following is a hermaphrodite animal?  
a. frog                      b. cow                      c. dog                      d. earthworm ✓
- In Hydra the offspring grows out of  
a. the parent's body. ✓                      b. Amoeba                      c. Paramecium                      d. human
- In humans, fertilization occurs in  
a. oviduct. ✓                      b. uterus.                      c. ovary.                      d. vagina
- In a mosquito, the eggs hatch to produce  
a. pupa.                      b. larva. ✓                      c. embryo.                      d. adult mosquito
- Which of the following reproduces by splitting into two?  
a. Hydra                      b. mosquito                      c. Amoeba ✓                      d. frog
- The fusion of sperm and egg produces  
a. zygote. ✓                      b. larva.                      c. pupa.                      d. embryo
- Humans start becoming sexually mature at the ages of  
a. 10-16. ✓                      b. 3 - 5.                      c. 13-18.                      d. 25-30.

B. VERY SHORT-ANSWER QUESTIONS: Give one-word answers.

- Improper working of the reproductive organs can lead to death. True or false? Ans: False
- What is the process of fusion of sperm and ovum called? Ans: Fertilization
- The fusion product of sperm and ovum is known as \_\_\_\_\_. Ans: zygote
- Organisms in which male and female gametes are present in the same organism are called \_\_\_\_\_. Ans: Hermaphrodites
- An earthworm, being a hermaphrodite, can reproduce on its own without the need of a partner. True or false? ✓
- In frogs, is the fertilization external or internal? Ans: External
- What is the onset of sexual maturity in animals known as? Ans: Puberty
- In humans, which organ produces the ovum? Ans: Testes
- Fertilization in humans takes place in the uterus. True or false? Ans: False
- Females of all mammals produce a single ovum at a time. True or false? Ans: False
- In mosquito, the life cycle is as follows: egg pupa larva mosquito. True or false? Ans: False
- The process of cells changing their size, shape and form to form specialized cells is called \_\_\_\_\_.  
Ans: . Cell differentiation/ maturation
- Is binary fission sexual or asexual? Ans: Asexual
- The transformation of the larva into an adult through drastic changes is called \_\_\_\_\_. Ans: Metamorphosis

C. SHORT-ANSWER QUESTIONS (TYPE I): Answer in a sentence or two.

- Why is reproduction important?

Ans: Reproduction is important for continuation of life from one generation to another generation.

2. How is sexual reproduction different from asexual reproduction?

Ans: Asexual Reproduction: The mode of reproduction involves only one parent for the production of new organisms is called asexual reproduction. Examples: Amoeba, Hydra, Paramecium.

Sexual Reproduction: The mode of reproduction involves two parents for the production of new organisms is called asexual reproduction. Examples: cats, dogs, humans.

3. What is menstruation?

Ans: Unfertilized ovum is expelled from the uterus along with some uterine muscles and blood is known as menstruation.

4. What is cell division?

Ans: After fertilization, the zygote travels down the oviduct and divides over and over again, to form a ball of cells. This is known as cell division.

5. What is metamorphosis?

Ans: The transformation of the larva into an adult through drastic changes is called metamorphosis.

6. List the various stages in the life cycle of a mosquito.

Ans: Eggs --> Larva Pupa --> Adult

D. SHORT-ANSWER QUESTIONS (TYPE II): Answer in about 30 words.

1. Differentiate between external and internal fertilization, giving two examples of each.

Ans: External fertilization: The fertilization which occurs outside the animal's body is known as external fertilization.

Examples: Frog, fish, star fish, jelly fish, etc.

Internal fertilization: The fertilization which occurs inside the female's body is known as internal fertilization. Examples:

Birds, reptiles, mammals.

2. How does fertilization occur in frogs?

Ans: During spring and the rainy season, the male and female frog clasp each other in water. The female lays hundreds of eggs. A layer of a jelly-like substance holds them together. The male ejects sperms directly over the cluster of floating eggs. The sperms swim in water with the help of their long tail, and fertilize the eggs.

3. How and where does fertilization take place in human beings?

Ans: Ovaries produce egg cell and testis produces sperm cell that fuse together in fallopian tube and form a single cell called zygote .

4. What happens in the female body if the ovum is not fertilized by a sperm?

Ans: If the ovum is not fertilized by a sperm, it is expelled from the uterus along with some uterine muscles and blood. This is known as menstruation.

5. How does Hydra reproduce?

Ans: Hydra reproduces by budding. In Hydra, a bud appears on the body .When bud matures detach from hydra and grows into a new organism.

6. Explain the difference between viviparous and oviparous animals.

Ans: Viviparous animals

(i) The animals that give birth to young ones are called viviparous animals. Example: Except platypus all mammals.

(ii) Embryo is developed inside the mother's womb.

Oviparous animals

(i) The animals that lay eggs are called oviparous animals. Examples: Fishes, birds.

(ii) Embryo is developed inside a hard shell outside the mother's body. Example: Hen's egg.

7. Explain what happens after a hen lays a fertilized egg.

Ans: After fertilization, a hard protective layer formed over a hen's egg. After the hard shell is formed around the embryo, the hen lays the egg.

After laying egg hen sit on egg to keep it warm. Development of the chick takes place inside the shell. It takes about 3 weeks for the embryo to develop into a chick. After its development is complete, the chick comes out by bursting open the egg shell.

E. LONG-ANSWER QUESTIONS: Answer in about 60 words.

1. Give details of two different ways in which a zygote develops in case of animals where fertilization is internal.

Ans: (i) Internal fertilization in earthworm: An earthworm, though a hermaphrodite, does not fertilize itself. Two earthworms come in contact with each other and exchange sperms. The eggs are fertilized internally with the sperms received from the partners. Thus, a zygote is developed.

(ii) Internal fertilization in human: In human fertilization takes place on meeting of male and female gamete inside body. Fertilization is internal, and the development of the zygote into a fully formed individual also occurs inside the body of the female.

2. What is puberty? What is it caused by? What changes occur in boys and girls during puberty?

Ans: The onset of sexual maturity occurs in boys at the age of 11-16 years, and in girls at the age of 10-15 years. This is known as puberty.

In boys, puberty is marked by the voice becoming deeper, growth of hair on the face and body, development of muscles and production of sperms by the testes.

In girls, breasts become bigger and hips get more rounded. These changes are caused by hormones that are different in girls and boys.

3. Discuss how a zygote develops into an individual in humans.

Ans: After fertilization, the zygote travels down the oviduct and divides over and over again, to form a ball of cells. This is known as cell division.

The cells then begin to form different tissues and organs of the body. This developing structure is called the embryo. Embryo gets embedded in the wall of the uterus for nutrition and protection.

During the development, the different groups of cells change their size and shape, and turn into the different body parts such as head, hands, legs, etc. This is called cell differentiation or cell maturation. The stage at which all the body parts of the embryo could be recognized is called, the foetus.

The foetus keeps developing further. When all body parts assume the right size and forms, the development is complete and the individual is born.

4. Explain the life cycle of a frog, with the help of a labelled diagram.

Ans: A frog has different stages of development between hatching of the eggs and formation of the individual. A frog passes through three stages during its development from an egg to an adult frog:

Egg ---> tadpole (larva) adult frog

The tadpole that hatches out of the egg looks very different from an adult frog. It undergoes changes to finally become a frog. The life cycle of a frog (fig.)

F. HOTS QUESTIONS: Think and answer.

1. Can the process of a child changing into an adult be called metamorphosis?

Ans: No, the process of a child changing into an adult cannot be called metamorphosis because the basic body structure does not change.

2. Frogs and fishes lay hundreds of eggs at a time. However, their population is very little as compared to the number of eggs they lay. Why?

Ans: Most of the eggs, tadpoles and young frogs get eaten by predators. That is why their population is much smaller than the number of eggs they lay.

3. Why do you think it is necessary for frogs and fishes to lay so many eggs?

Ans: Frogs and fishes lay hundreds of eggs for the survival of their species. This is because their fertilization is external and a large number of the eggs that hatch in the open get eaten by predators.

4. What do you think would have happened if humans also gave birth to a large number of babies at the same time?

Ans: Since mortality of infants is very low as compared to animals. Therefore if they gave birth to a large number of babies at the same time, their population would have become very high and unsustainable.

5. Can a woman with a blocked fallopian tube give birth to a child? Why?

Ans: No. a blocked fallopian tube prevents the ova to fertilize with sperm cell as the male gametes from the father cannot come in contact with female gametes of mother.

6. Under what circumstances can twins are born in humans?

Ans: When two ova can be produced by ovaries and both get fertilized, it can result in twins.

7. Why is it that dogs always produce several puppies whereas human beings usually produce only one child at a time?

Ans: Dogs produce more than one egg at a time. Hence, more puppies are born to them at the same time. Whereas humans usually produce one egg at a time, hence produce only one child at a time.