

INTEXT QUESTION-ANSWERS

Think and Answer

Q. 1. Binary fission is common in unicellular organisms. (True/False)

Ans. True.

Q. 2. Amoeba reproduces by budding. (True/False)

Ans. False.

Q. 3. Asexual reproduction is seen only in single celled organisms. (True/False)

Ans. True.

TEXTBOOK EXERCISES (SOLVED)

(A) Fill in the Blanks

1. The process of fusion of sperm and ovum is known as
2. Union of gametes does not take place during reproduction.
3. Binary fission occurs in
4. In human, fertilization is
5. The zygote after repeated division gives rise to

Ans. 1. Fertilization, 2. Asexual, 3. Amoeba, 4. Sexual, 5. Embryo.

(B) Write True (T) or False (F)

1. The animals which lay eggs are called oviparous.
2. Each sperm is a single cell.
3. Hydra reproduces by binary fission.
4. A zygote is formed as a result of fertilization
5. In human external fertilization takes place.

Ans. 1. (T), 2. (T), 3. (T), 4. (T), 5. (T).

(C) Match Column 'A' with Column 'B'

Column 'A'	Column 'B'
1. The process of producing young ones of own kind	(a) Oviparous animals
2. A method of asexual reproduction in Hydra	(b) Zygote
3. Its fertilization takes place inside water	(c) Reproduction
4. Egg-laying animals	(d) Frog
5. Sperm and egg/ovum fuse to form	(e) Budding

Ans.

Column 'A'	Column 'B'
1. The process of producing young ones of own kind	(c) Reproduction
2. A method of asexual reproduction in Hydra.	(e) Budding
3. Its fertilization takes place inside water	(d) Frog
4. Egg-laying animals	(a) Oviparous animals
5. Sperm and egg/ovum fuse to form	(b) Zygote

(D) Choose the Correct Answer

1. Which of these are the male reproductive organs in humans ?

- (a) Sperms (b) Ova
(c) Testes (d) Ovaries.

Ans. (a) Sperms.

2. Which of the following is a hermaphrodite animal ?

- (a) Frog (b) Cow
(c) Dog (d) Earthworm.

Ans. (d) Earthworm.

3. In humans, fertilization occurs in :

- (a) Oviduct (b) Uterus
(c) Ovary (d) Vagina.

Ans. (c) Ovary.

4. In a mosquito, the eggs hatch to produce :

- (a) Pupa (b) Embryo
(c) Larva (d) Adult mosquito.

Ans. (c) Larva.

5. The fusion of sperm and egg produces :

- (a) Zygote (b) Gamete
(c) Embryo (d) Oviduct.

Ans. (a) Zygote.

(E) Very Short Answer Type Questions

Q. 1. Define the following :

- (a) Fertilization
(b) Metamorphosis
(c) Hermaphrodite animals
(d) Reproduction.

Ans. (a) Fertilization : Sexual reproduction requires two parents, a male that produces sperms and a female that produces eggs. The process of forming a zygote by the union of egg and sperm is called fertilization.

(b) Metamorphosis : The changes that occur during the transformation from larva to adult are called metamorphosis. This occurs in the life cycle of frog.

(c) **Hermaphrodite animals** : Animals that can produce both male and female gametes are called Hermaphrodite. Example : (1) Earthworm (2) Hydra

(d) **Reproduction** : It is a biological process in which organisms reproduce their species by producing another organism. This process of producing offspring of the same kind is called reproduction. The born creatures are called progeny and the male and female from whom they are born are called parents.

Q. 2. What is male gamete in human called ?

Ans. Male gamete is called *sperm*.

Q. 3. Name various stages in the life cycle of a butterfly.

Ans. (1) Egg (2) larva (caterpillar) (3) pupa(chrysalis) (4) adult (butterfly).

Q. 4. What is a zygote ?

Ans. Zygote : The first cell formed by the fusion of male gamete and female gamete is the zygote from which the new organism is formed.

(F) Short Answer Type Questions

Q. 1. What is cell division ?

Ans. Cell Division : *The biological process by which a parent cell divides to produce two or more cells is called cell division. Cell division is actually a step in the cell cycle.*

Q. 2. What is the difference between asexual reproduction and sexual reproduction ?

Ans. Difference between asexual reproduction and sexual reproduction :

Asexual Reproduction	Sexual Reproduction
(1) New organisms are produced from one parent only. (2) Reproductive organs are not developed. (3) Meiosis does not take place. (4) Cells do not fuse. (5) A new organism develops with one cell. (6) The new organism is replica of the parent. (7) It does not bring diversity.	(1) Both male and female parents are required for the production of a new organism. (2) Reproductive organs are required. (3) Meiosis is necessary in one of the steps. (4) Gametes fuse to form zygote. (5) New organism develop by fusion of gametes. (6) The new organism is often different. (7) It brings diversity.

Q. 3. Why is reproduction important ?

Ans. Importance of reproduction in living world : It is the ability in living organisms by which they produce new living organism of same kind i.e. similar to themselves. Reproduction increases the number of the species of the same kind. This biological process is essential to maintain survival and continuity. This also results in

the transfer of genetics and other traits to the next generation.

Q. 4. What is binary fission ?

Ans. Binary fission means the division of a cell into two parts. This is the simplest method of asexual reproduction. This process is seen in unicellular organisms like Amoeba, Paramecium etc.

Difference between zygote and foetus :

Zygote	Foetus
(1) The zygote is formed after the fusion of sperm and ovum during fertilization.	(1) The zygote develops into foetus and the foetus is the stage in which all the body parts can be identified.
(2) It is formed as a result of the first stage of the reproductive process.	(2) When the development of the foetus is complete, the mother gives birth to a new organism.

Q. 2. Explain fertilization. What is the difference between external fertilization and internal fertilization ?

Ans. Fertilization : Male gamete (sperm) and female gamete (egg) unite to form a zygote which later develops into a new organism. This combination process is called fertilization.

Difference between External Fertilization and Internal Fertilization :

External Fertilization	Internal Fertilization
(1) Fusion of male gamete (sperm) and female gamete (egg) takes place outside the body.	(1) The fusion of male and female gamete takes place inside the body of the female.
(2) Both organisms shed the gametes outside the body.	(2) The male secretes sperm into the body of the female.
(3) Development takes place outside the body.	(3) Development takes place within the body.
(4) Example : Frogs	(4) Example : Man, Cattle, Bird.

Q. 3. Describe the process of fertilization in human beings.

Ans. Process of fertilization in humans : Fertilization in humans can be divided into the following stages :

1. Movement of sperm towards the ovum : In both cases whether internal fertilization or external fertilization, the sperm moves towards the ovum. Fertilizin protein is secreted outside the ovum which attracts the sperm and when it approaches nearby, it secretes antifertilizin protein. These two chemicals work to attract each other. In this way, the sperm can fertilize only the ovum of that species.

2. Penetration of the ovum into the sperm : After sticking to the outer surface of the ovum, the chromosomes of the sperm secrete an enzyme which dissolves the outer membrane of the ovum and penetrates inside.

3. A fertilization cone is formed by the sperm coming into contact with the egg cell fluid. At this place, the sperm's head is pulled towards the ovum, from which many changes in the ovum's cell fluid begin.

4. Behaviour of sperm in the ovum : At the time of penetration, the chromosomes of the sperm are towards the front and the nucleus is behind. The nucleus rotates by 180° . Now both the nuclei come face to face and merge with each other resulting in the formation of zygote.

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

Ans. Metamorphosis : The process of transformation of larva into adult animal through some intensive changes is called metamorphosis.

Example : (i) Frog (ii) Silkworm.

The diagram shows the different stages of development of a frog. There are three distinct stages : (i) egg (ii) tadpole larva (iii) adult. Frogs or tadpoles are very different from each other. There is a special change in the frog : change of gills into lungs. The animals which have Metamorphosis are : frogs, silkworms.

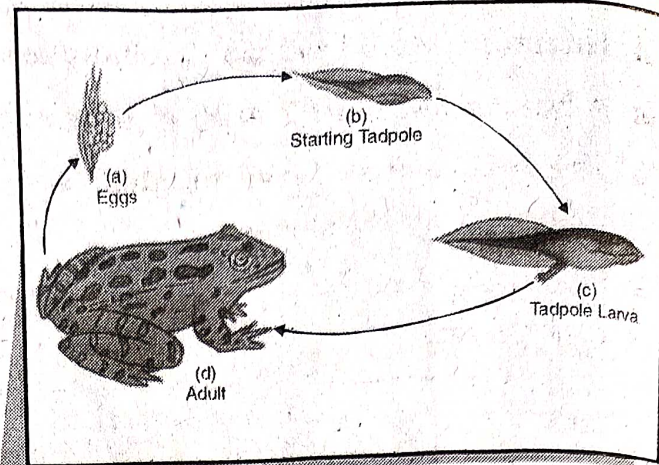


Fig. Life Cycle of Frog