

## Very Short Answer Questions

**Q. 1. Although 2 cells called gametes fuse, the product formed is a single cell called zygote. Justify. [NCERT Exemplar]**

**Ans.** During fertilisation, only the nucleus of the sperm moves into the egg cell and fuses with the egg nucleus to form the zygote. The sperm degenerates.

**Q. 2. Stages in the life cycle of silkworm are given below. Write them in sequential order.**

**Pupa, silkworm, egg, silk moth [NCERT Exemplar]**

**Ans.** Egg, silkworm, pupa, silk moth

**Q. 3. In markets, eggs of birds are available but never eggs of dogs. Why? [NCERT Exemplar]**

**Ans.** Dogs do not lay eggs

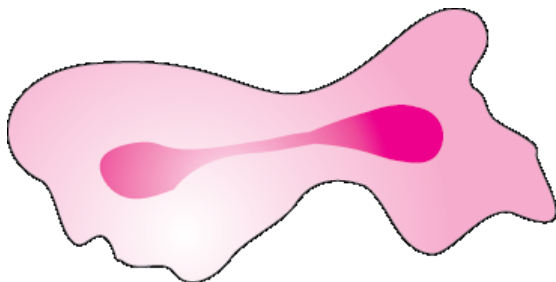
**Q. 4. The eggs of frogs do not have shells for protection, yet they are safe in water. How? [NCERT Exemplar]**

**Ans.** A layer of jelly covers the eggs of frog and provides protection.

**Q. 5. Why do only male gametes have a tail? [NCERT Exemplar]**

**Ans.** Because they have to be motile and reach the non-motile female gamete.

**Q. 6. What does the given figure represent? [NCERT Exemplar]**



**Ans.** The figure shows an Amoeba undergoing binary fission with a dividing nucleus.

## Short Answer Questions

**Q. 1. The term metamorphosis is not used while describing human development. Why?**

**[NCERT Exemplar]**

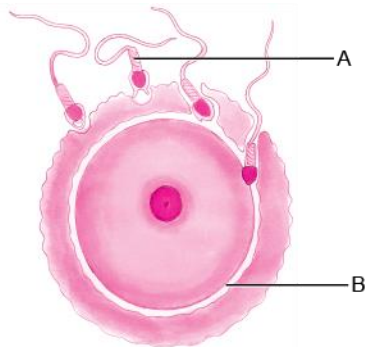
**Ans.** In human beings, body parts of an adult are present from the time of birth itself. Whereas, in metamorphosis, the parts of the adult are different from those at the time of birth.

**Q. 2. Mother gives birth to a baby but the baby has characters of both parents. How is this possible?**

**[NCERT Exemplar]**

**Ans.** Although mother gives birth to a child, fertilisation involves two gametes, one from the mother and the other from father. The zygote, therefore has both father and mother's contribution. Since the zygote develops into the baby it has characters of both parents.

**Q. 3. Observe the figure given below and answer the questions that follow.**



**a. Label A and B.**

**b. Identify the process.**

**c. What happens during this process and what is formed?** **[NCERT Exemplar]**

**Ans. a.** A–Sperm; B–Ovum (egg)

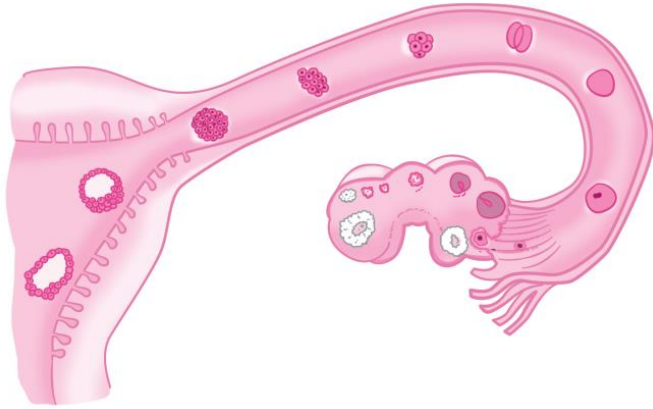
**b.** Fertilisation

**c.** Sperm nucleus fuses with the egg nucleus to form the zygote.

**Q. 4. How can we say that fish exhibits external fertilisation?** **[NCERT Exemplar]**

**Ans.** Female fish releases eggs into water and male fish releases sperms. Sperms swim randomly in water and comes in contact with the eggs. The nucleus of the sperm moves into the egg and fuses with it. Since fertilisation occurs in water, outside the female body, it is external fertilisation.

**Q. 5. After observing above figure, answer the following.** **[NCERT Exemplar]**

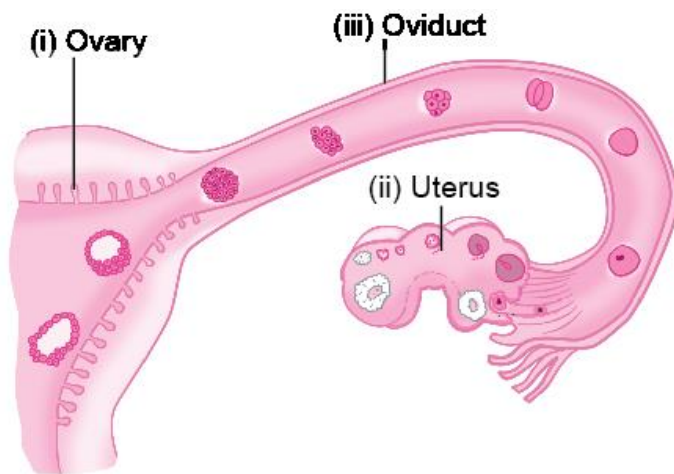


(i) Read the following statements and label them in the figure. [NCERT Exemplar]

- (a) The part which produces female gametes.
- (b) The part where development of the baby takes place.
- (c) The part through which the developing embryo passes to reach the uterus.

(ii) Explain the future development of the embryo that would take place after it gets embedded in the uterus.

Ans. (i)



(ii) After the embryo gets embedded in the wall of the uterus, it gradually develops body parts such as hands, legs, head, eyes, etc. The stage of embryo in which all the body parts can be identified is called foetus. When the development of the foetus is complete, the mother gives birth to the baby.

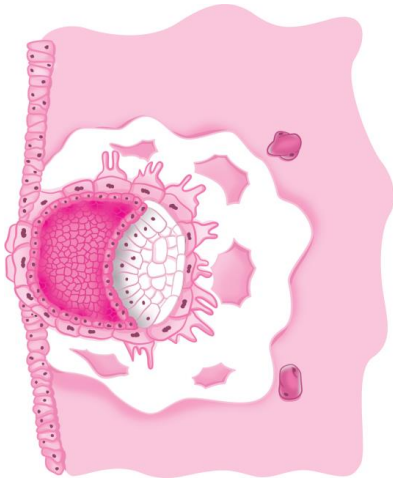
**Q. 6. Hens and frogs are both oviparous exhibiting different types of fertilisation. Explain. [NCERT Exemplar]**

**Ans.** Hens are oviparous in which internal fertilisation takes place. The fertilised egg develops into an embryo inside the body. However, the development of chick from the

embryo takes place outside the body. Frogs are oviparous in which both fertilisation and development of zygote to embryo and young ones occurs outside the body.

**Q. 7. Observe the following figures.**

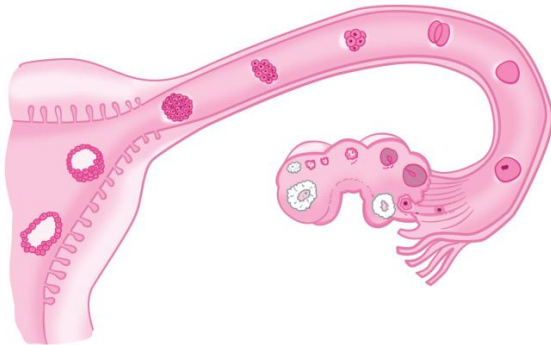
**(a)**



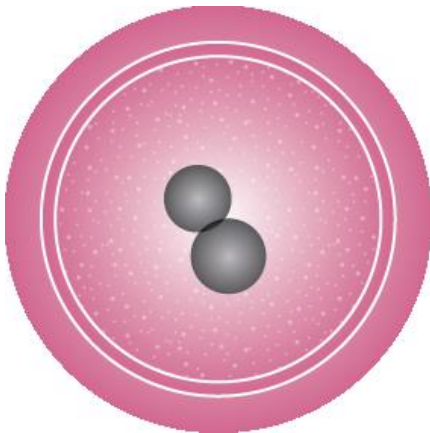
**(b)**



(c)



(d)



(i) Identify the stages a to d in above figures during development of human baby.

(ii) Arrange the stages in correct sequence of development.

(iii) Explain the development that takes place in any one stage.

Ans. (i) a. Embedding of the embryo in the uterus.

b. Fertilisation.

c. Zygote formation and development of an embryo from the zygote.

d. Zygote showing fusion of nuclei.

(ii) The correct sequence is (b), (d), (c), (a)

(iii) **Zygote formation:** The sperm and the egg nuclei fuses to form a single nucleus resulting in the formation of a fertilised egg or zygote. (**Note:** One step is explained as an example. Students may explain any other step.)

## **Hots (Higher Order Thinking Skills)**

**Q. 1. Why do fishes and frogs produce enormous number of gametes?**

**Ans.** Fishes and frogs fertilise externally producing enormous number of gametes because some eggs may be lost due to environmental agents like flowing water, wind, etc. and this increases the chances of fertilisation.