

**CLASS X: SCIENCE****Chapter 7: How do Organisms Reproduce?**

Questions and Solutions | Page No. 114 - NCERT Books

Q1. What is the importance of DNA copying in reproduction?

Ans. DNA copying is an important phenomenon through which organisms pass their characters to offspring and produce variation.

Q2. Why is variation beneficial to the species but not necessarily for the individual?

Ans. A particular variation in an individual may not be suitable for any given condition but when conditions change such variation may save it from being dead and leads to form a new population with suitable characters.

Questions and Solutions | Page No. 119 - NCERT Books

Q1. How does binary fission differ from multiple fission?

Ans. In binary fission, one nucleus divides only once and results into the formation of two daughter nuclei but in multiple fission, the nucleus undergoes repeated cell division resulting in many nuclei. So, in binary fission only two daughter cells are produced but in multiple fission many cells are produced.

Q2. How will an organism be benefited if it reproduces through spores?

Ans. (i) Spores are protected by a hard covering which can tolerate hardship of environmental conditions.
(ii) Being light weight they can be carried away by air and water currents to new locations where on germination give rise to new individuals.

Q3. Can you think of reasons why more complex organisms cannot give rise to new individuals through regeneration?

Ans. As organisms become more and more complex they lose the property of regeneration. So they fail to regenerate.

Q4. Why is vegetative propagation practised for growing some types of plants?

Ans. There are several reasons for which vegetative propagation is favoured. They are as follows :
(i) Either they do not produce seeds or their seeds are not viable.
(ii) Their qualities are good and we want to preserve those qualities.
(iii) Only male or female plant is available.
(iv) Fast growth.



Q5. Why is DNA copying an essential part of the process of reproduction?

Ans. Basic event in reproduction is production of DNA copies in a reproducing cell. The process is called DNA replication. When the cell divides into two, each new cell gets a copy of each DNA or chromosome along with the whole cellular apparatus.

Complete accuracy in DNA copying leads to two exactly identical cells but any error in duplication can lead to dissimilar cells or variations.

Questions and Solutions | Page No. 126 - NCERT Books

Q1. How is the process of pollination different from fertilisation?

Ans.

Differences between pollination and fertilization	
Pollination	Fertilization
Transfer of pollen grains from anther to stigma.	Fusion of male and female gametes.
It does not ensure formation of zygote.	It ensures formation of zygote and further development
It does not initiate fruit formation.	After fertilization ovary develops into fruits.
There are many agents of pollination.	Fertilization is always same in all plants.

Q2. What is the role of the seminal vesicles and the prostate gland?

Ans. Seminal vesicles are responsible for adding a fluid medium to sperms and provides nutrition for sperms whereas prostate gland adds fluid for their motility, maintaining pH in female reproductive tract.

Q3. What are the changes seen in girls at the time of puberty?

Ans. Following are the changes seen in female at the time of puberty-

- A. Growth of hair under armpits and pubic region.
- B. Darkening of pubic region.
- C. High pitch voice.
- D. Growth and development of breast.
- E. Darkening of area around nipples.
- F. Onset of menstrual cycle.

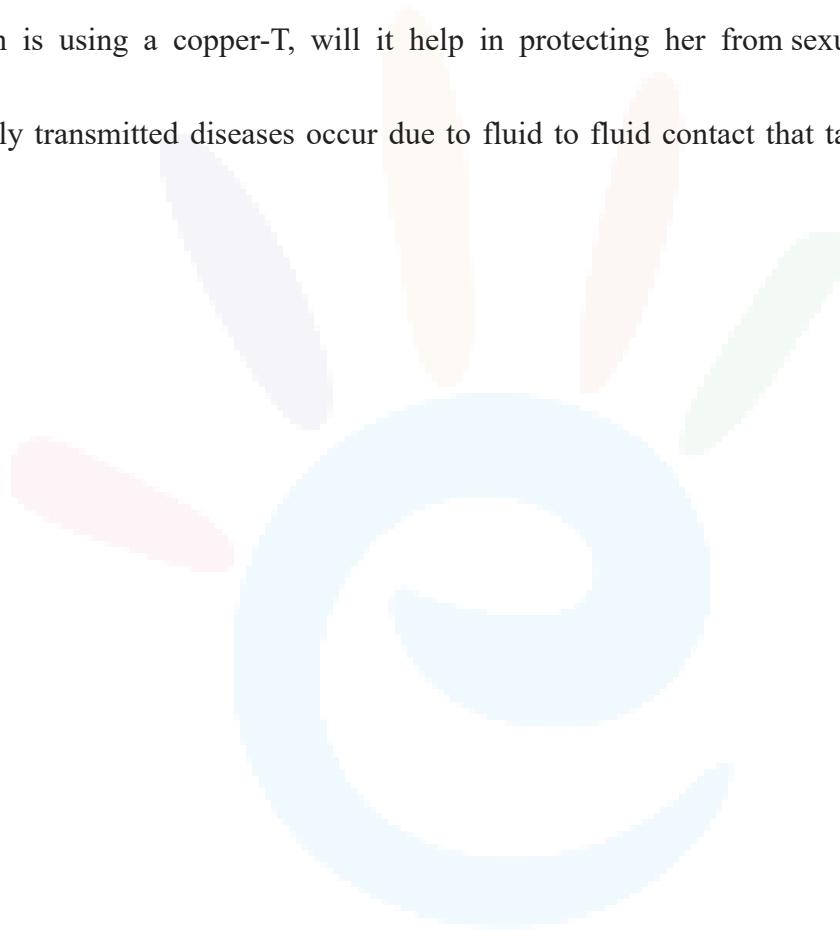


Q4. How does the embryo get nourishment inside the mother's body?

Ans. The embryo gets nutrition from the mother's blood with the help of a special tissue called placenta. This is a disc which is embedded in the uterine wall. It contains villi. On the mother's side are blood spaces, which surround the villi. This provides a large surface area for glucose and oxygen to pass from the mother to the embryo.

Q5. If a woman is using a copper-T, will it help in protecting her from sexually transmitted diseases?

Ans. No, sexually transmitted diseases occur due to fluid to fluid contact that takes place in the vagina.



EXERCISES

Q1. Asexual reproduction takes place through budding in

- (A) Amoeba
- (B) Yeast
- (C) Plasmodium
- (D) Leishmania.

Ans. (B) Yeast

Q2. Which of the following is not a part of the female reproductive system in human beings ?

- (A) Ovary
- (B) Uterus
- (C) Vas deferens
- (D) Fallopian tube

Ans. (C) Vas deferens.

Q3. The anther contains

- (A) Sepals
- (B) Ovules
- (C) Carpel
- (D) Pollen grains.

Ans. (D) Pollen grain

Q4. What are the advantages of sexual reproduction over asexual reproduction ?

Ans. (i) Sexual reproduction is better than asexual reproduction because it brings variation which is necessary to have in a population so in case of adversity of environment all the member does not die but members with suitable variation survive to save the population from getting extinct.

(ii) These variation collected over a period of time leads to formation of new species.

(iii) In asexual reproduction variation is not present.

Q5. What are the functions performed by the testis in human beings?

Ans. Testis are responsible for production of sperms and testosterone hormone.



Q6. Why does menstruation occur?

Ans. It occurs when egg produced is not fertilized. So thick and soft lining of uterus breaks down, shedding blood along with mucous which comes out of vagina in form of bleeding.

Q7. Draw a labeled diagram of the longitudinal section of a flower.

Ans. Refer theory

Q8. What are the different methods of contraception?

Ans. Different methods of contraception can be classified into four categories :

- (i) Barrier method in which sperms are prevented to come in contact with ovum to avoid fertilization, this is used by male in the form of condoms and females in the form of cervical cap.
- (ii) Chemical methods- Some hormonal pills are available for females which are hormonal preparation and inhibit process of ovulation.
- (iii) IUCD - are Intra Uterine Contraceptive Devices which prevents the implantation of fertilized egg into uterus.
- (iv) Surgical methods - In males, vas deferens is cut and tied and or in females fallopian tubes are cut and tied so the sperms can not come in contact with ovum to lead to fertilization.

Q9. How are the modes for reproduction different in unicellular and multicellular organisms ?

Ans. Unicellular organisms reproduce by binary fission (e.g. Amoeba, Paramecium), multiple fission (e.g. Plasmodium), budding (e.g. Yeast), spore formation (e.g. Bacteria, Amoeba), but multicellular organisms reproduce by means of budding (e.g. Hydra), fragmentation (e.g. Spirogyra), regeneration (e.g. Hydra), vegetative propagation in all plants and sexual reproduction in all higher plants and animals.

Q10. How does reproduction help in providing stability to populations of species ?

Ans. By reproduction variations are added in population, which may be suitable for some changing conditions of environment. In case of adversity of environment some of member survives and prevents the entire population from vanishing off.

Q11. What could be the reasons for adopting contraceptive methods ?

Ans. Contraceptive methods are adopted for one or more of following reasons-

- (i) To maintain the population size by preventing unwanted children.
- (ii) To maintain the distance between two children and to plan the family size.
- (iii) To prevent from sexually transmitting diseases.
- (iv) Good reproductive health.