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Class X Biology Ch 8. How do organisms reproduce

Chapter – 8

How Do Organisms Reproduce?

Q 1. What is the importance of DNA copying in reproduction?

Ans. DNA contains information for inheritance of features from parents to next generation. DNA present in the cell nucleus is the information source for making proteins. If the information is different, different proteins will be made. Different proteins will eventually lead to altered body designs.

Q 2. Why is variation beneficial to the species but not necessarily for the individual?

Ans. Variations are useful for the survival of species in changed environmental situations. For example, if a population of reproducing organisms were suited to a particular niche (well-defined place of abode) and if the niche is drastically altered the population could be wiped out. However, if some variations were to be present in a few individuals in these populations, there would be some chance for them to survive. Thus if there were a population of bacteria living in temperate waters, and if water temperature were to be increased by global warming, most of these bacteria would die, but few variants resistant to heat would survive and grow further. Variation is thus useful for the survival of species over time.

Q 3. How does binary fission differ from multiple fission?

Ans. Difference between binary fission and multiple fission:

Binary fission	Multiple fission
Spitting of unicellular organisms like Amoeba in to two equal halves during cell division is termed binary Fission.	Division of single-celled organisms such as malarial parasite in to many daughter cells simultaneously is termed multiple fission.

Q 4. How will an organism be benefited if it reproduces through spores?

Ans. The spores are covered by thick walls that protect them until they come in to contact with suitable moist surface and can begin to grow.

Q 5. Can you think of reasons why more complex organisms cannot give rise to new individuals through regeneration?

Ans. The reason is that complex organisms are not merely random collection of cells. Specialised cells are organised in them as tissues and tissues are organised as organs. These organs have to be placed at definite positions in the body. In such a carefully organised situation, cell-by-cell division would be impractical. Complex multicellular, therefore, need to use more complex ways of reproduction.

Q 6. Why is vegetative propagation practised for growing some types of plants?

JSUNIL TUTORIAL

Class X Biology Ch 8. How do organisms reproduce

Ans. (i) Plants raised by vegetative propagation can bear flower and fruits earlier than those produced from seeds.

(ii) Such methods also make possible the propagation of plants such as banana, orange, rose and jasmine that have lost the capacity to produce seeds.

(iii) All plants produced by this method are genetically similar enough to the parent plant to have its all characteristics.

Q 7. Why is DNA copying an essential part of the process of reproduction?

Ans. Same as of question no 1.

Q 8. How is the process of pollination different from fertilisation?

Ans. Distinction between pollination and fertilisation:

Pollination	Fertilisation
Pollination refers to the process of transfer of pollen grains from anther of a flower to the stigma of either same flower or any other flower of same species.	Fertilisation refers to fusion of male gamete and female gamete to form a zygote.

Q 9. What is the role of the seminal vesicles and the prostate gland?

Ans. Secretions of seminal vesicles and prostate gland provide fluid medium to sperms to move and also provide nutrition to them.

Q10. What are the changes seen in girls at the time of puberty?

Ans. During puberty breast size begins to increase with darkening of the skin of the nipples at the tip of the breasts. Also, girls begin to menstruate at around this time.

Q11. 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 wall of the uterus. It contains finger-like projections villi on the embryo's side of the tissue. On the mother's sides 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 and waste products from embryo to mother.

Q12. If a woman is using a copper-T, will it help in protecting her from sexually transmitted diseases?

Ans. If a woman uses a copper-T as a method of contraception for avoiding unwanted pregnancies, then Copper-T cannot protect her from acquiring sexually transmitted diseases.

Q13. Asexual reproduction takes place through budding in

(a) amoeba (b) yeast (c) plasmodium (d) leishmania **Ans.** (b)

Q14. 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

JSUNIL TUTORIAL

Class X Biology Ch 8. How do organisms reproduce

Q15. The anther contains

(a) sepals (b) ovules (c) carpel (d) pollen grains

Ans. (d) Pollen grains.

Q16. What are the advantages of sexual reproduction over asexual reproduction?

Ans. Sexual reproduction leads to variation due to recombination of genetic material DNA. These variations are essential for survival of species. On the contrary, asexual reproduction does not bring variations.

Q17. What are the functions performed by the testis in human beings?

Ans. In human beings, testis performs dual function:

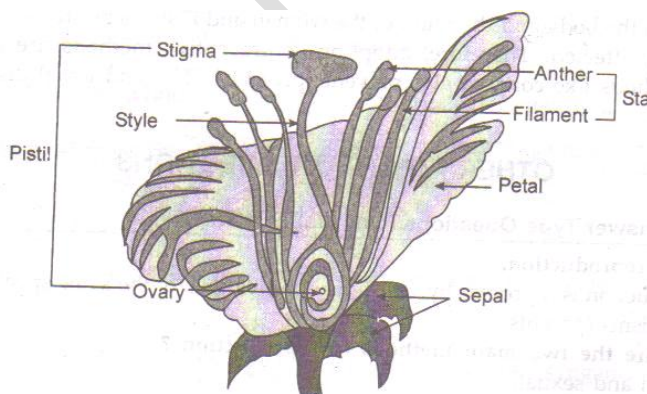
(i) Production of sperms. (ii) Secretion of male hormone testosterone.

Q18. Why does menstruation occur?

Ans. When in human female if the egg is not fertilised, it lives for about one day. Since the ovary releases one egg every month, the uterus also prepares itself every month to receive a fertilised egg. Thus its lining becomes thick and spongy. This would be required for nourishing the embryo if had fertilisation taken place. Now, however this lining is not required any longer. So, the lining slowly breaks and comes out through the vagina as blood and mucus. This cycle takes place roughly every month and is known as menstruation.

Q19. Draw a labelled diagram of the longitudinal section of a flower.

Ans.



Longitudinal section of flower

Q20. What are the different methods of contraception?

Ans. Various methods used for regulation of child birth can broadly be categorised as:

(i) **Barrier Method:** In this method, physical devices such as condom, diaphragm, cervical cap and copper -T (IUCD) are used.

(ii) **Chemical Method:** Use of spermicidal jelly by woman, oral pills and vaginal pills. Oral pills are mainly hormonal preparations and are called Oral Contraceptive (OC).

JSUNIL TUTORIAL

Class X Biology Ch 8. How do organisms reproduce

(iii) Surgical Method: In surgical method, a small portion of vas deferens in male, and the fallopian tube in female, is surgically removed or ligated (tied). It is called vasectomy in males and tubectomy in females.

Q21. How are the modes for reproduction different in unicellular and multicellular organisms?

Ans. Difference between unicellular organism and multicellular organism are given below:

Unicellular organism	Multicellular organism
In unicellular organisms, cell division, or fission, leads to the creation of new individuals.	In multicellular organism with simple body organisation simple reproductive methods like budding, fragmentation still works. However, in complex multicellular organism such simple methods are not seen and they reproduce by sexual reproduction only.

Q22. How does reproduction help in providing stability to populations of species?

Ans. The consistency of DNA copying during reproduction is important for the maintenance of body design features that allow the organism to use the particular niche. Reproduction is therefore linked to the stability to population of species.

Q23. What could be the reasons for adopting contraceptive methods?

Ans. The sexual act always has the potential to lead to pregnancy. Pregnancy will make major demands on the body and the mind of the woman and if she is not ready for it, her health will be adversely affected. Therefore adopting contraceptive methods are essential. Some contraceptive methods like condom also prevent spread of STDs and lethal diseases like HIV-AIDS.