

JSUNIL TUTORIAL

Class X Biology Ch 8. How do organisms reproduce

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

Ans. The creation of a DNA copy is essential to produce organisms which are similar to their parents.

As copying of DNA brings some variations each time, the surviving cells are similar to parent cell but subtly different from each other. This tendency for variation during reproduction brings variations among the individuals of the same species.

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

Ans. Niches are well-defined places in the ecosystem where population of organisms lives in. If population of reproducing organisms is suited to a particular niche and if that niche is drastically altered or destroyed, because of uncontrollable reasons like temperature changes, water level changes etc, the population can be wiped out. However, if some variations are present in a few individuals in these populations, there will be chances for their survival. The surviving individual can further reproduce and develop a population as per the changed niche. In this way, variation is beneficial to the species but not necessarily for the individual

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

Ans : Binary Fission

1. Nucleus divides into two daughter nuclei.
2. Constriction is formed in the cell after nuclear division.
3. Only two daughter cells are produced
4. It takes place in favourable conditions.

Multiple fission

1. Nucleus divides into many daughter nuclei.
2. Division of cytoplasm occurs very late thus many cells are produced simultaneously.
3. Many new daughter cells are produced.
4. It takes place in adverse conditions.

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

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Ans. Spores have a hard outer covering that is able to withstand adverse conditions of high temperature, shortage of water and food. So if an organism reproduces through spore formation it can easily withstand these adverse conditions.

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

Ans. Higher complex organisms cannot give rise to new individuals through regeneration because:

1. Higher organisms have very complex body designs i.e. they show the following hierarchy of organization cell-tissue-organ-organ system.
2. Higher organisms do not have special cells which help in regeneration of lost part.

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

Ans. Vegetative propagation is used to grow some plants such as banana, orange, rose etc because these plants have lost the capacity to produce viable seeds.

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

Ans. The creation of a DNA copy is essential to produce organisms which are similar to their parents.

As copying of DNA brings some variations each time, the surviving cells are similar to but subtly different from each other. This tendency for variation during reproduction brings variations among the individuals of the same species.

Q.8. How is process of pollination different from fertilization?

Pollination

1. It is the process of transfer of pollen grains from anther to stigma.
2. Through this process pollen grains carrying male nucleus reach to stigma (part of female reproductive system).

Fertilization

1. It is the process of fusion of male and female nucleus.
2. Through this process diploid zygote is formed which develops into a seed.

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

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Ans. Secretions of seminal vesicle and prostate gland provide nutrition and motility to the sperms.

This secretion also helps in transport of sperms.

Q.10. What are the changes seen in girls at the time of puberty.

Ans. Following changes come in girls at the time of puberty:

1. Increase in the breast size of the girls. 2. Growth of hair under the arm-pits and pubic hair starts.

3. Menstruation cycles commence. 4. Skins become oily.

Q.11. If a woman is using a copper-T, will it help in protecting her from sexually transmitted diseases?

Ans. No, because copper-T will not prevent contact body fluids. Thus it will not protect her from sexually transmitted diseases.

Q.12. What are the advantages of sexual reproduction over asexual reproduction?

Ans. Following are the advantages of sexual reproduction over asexual reproduction:

i. In sexual reproduction cells with different genetic material fuse. Thus it leads to mixing of different characters and new characters emerge.

ii. Accumulation of variations leads to formation of new species.

iii. Sexual reproduction has speeded up the process of evolution.

Q.13. What are the functions performed by the testis in human beings?

Ans. Testis is the male reproductive organs in humans. Testis produces sperms (haploid male gamete) which contain haploid set of chromosomes of father.

Q.14. Why does menstruation occur?

Ans. The removal of the inner, thick and soft lining of the uterus along with its blood vessels as well as blood in the form of vaginal bleeding is called menstruation. In humans after a girl attains puberty ovaries start producing mature ovum every month and also uterus lining gets thickened to receive zygote. When the uterus does not receive any zygote then menstruation occurs to excrete lining of uterus and degenerating ovum.

Q. 15. What are the different methods of contraception?

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Ans. The different methods of controlling the child birth are –

(1) Hormonal methods: Various kinds of pills containing hormones which prevent the release of egg from the ovary, without interfering with other phases of menstrual cycle, are taken orally.

(2) Barrier method: These are the physical and chemical barriers which prevent the sperms meeting the egg. Physical devices such as condoms, diaphragms and cervical caps are used.

(3) Intrauterine Devices: Commonly called as I.U.Ds, they are the devices made of plastics and come in different shapes. The most commonly among these is copper- 'T'. These devices are placed inside the uterine cavity and permanently kept there. It prevents the implantation in the uterus.

(4) Surgical methods. The surgical methods are safe and permanent.

(i) Vasectomy. In this operation, a small piece of vas deferens is cut and removed and the two ends of the cut vas deferens are tied.

(ii) Tubectomy. In this operation, fallopian tubes are cut, tied with nylon thread to close the passage, which prevents the passage of eggs.

Q.16. How are the modes of reproduction different in unicellular and multicellular organisms?

Ans. Unicellular organisms contain only one cell so they reproduce by asexual reproduction.

Example: budding, binary and multiple-fission are some of the asexual methods. Multicellular organisms which have complex body designs (have organ systems) ex. Humans, animals, plants reproduce sexually.

Q.17. How does reproduction help in providing stability to populations of species?

Ans. Reproduction is the process through which an organism produces new organism of its own kind.

It is necessary because in a population organisms die due to old age or disease thus it keeps the number of organisms in a population constant and provides stability to a population.

Q.18 What could be the reasons for adopting contraceptive methods?

Ans. Following are some reasons for adopting contraceptive methods:

1. For population control. 2. To prevent spread of STDS (sexually transmitted diseases).