How do Organism Reproduce: In-Text Questions

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

Sol. The importance of DNA copying in reproduction are:

- (i) With help of DNA copying, traits are inherited from parents to offspring.
- (ii) It sometimes produces variations occur which form the basis for evolution.

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

- *Sol.* Variation is beneficial to the species but not necessarily for the individual because sometimes variation cause the death of that individual but for species variation cause the existence of that species.
 - Example: If there is a population of certain bacteria living in normal climatic conditions. If the temperature increases due to natural disaster, then most of these bacteria will not be able to survive and hence they die. But some bacteria with some variations have ability to resist heat would survive and grow further.

So from the above example, we can say, variation is beneficial to species but not necessarily for the individual.

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Q.1 How does binary fission differ from multiple fission?

Sol. Difference between binary and multiple fission:

Binary fission:

(i) In this process of asexual reproduction, parent organism divides to form two new organisms. Example: Amoeba, Amoeba reproduces through binary fission.

Multiple fission:

(ii) In this process of asexual reproduction, parent organism divides to form many new organisms. Example: Plasmodium- Plasmodium reproduces by multiple fission.

Q.2 How will an organism be benefited if it reproduces through spores?

Sol. An organism will be benefited if it reproduces through spores because spores are covered by thick layer that protects them from adverse conditions like lack of food, water or high temperature. As the favourable conditions occurs, these spores can start grow to produce new organism.

Q.3 Can you think of reasons why more complex organisms cannot give rise to new individuals through regeneration?

Sol. In complex organisms, highly differentiated tissues and high degree of organs are present and a single cell of any tissue is not able to produce another type of tissue. For example: a cat is a complex multicellular organism which has high degree of body organisation. If we cut cat into two parts, then the cells of one body part are not able to produce cells of other body part to form a complete cat. But in case of planaria (simple organism), cells in the cut body part are able to produce cells of other body parts.

So, more complex organisms cannot give rise to new individuals through regeneration

Q.4 Why is vegetative propagation practiced for growing some types of plants?

*Sol. The v*egetative propagation is practiced for growing some types of plants because of following reasons: (i) It is used to grow the plants which do not produced seed or produced viable-seeds. Example: Orange, Banana, Pineapple.

(ii) By this method, plants can be introduced in new areas where the seed germination fails due to environmental factors and the soil.

(iii) It is faster, easier and cheaper method for growing the plants.

(iv) This method preserves the good quality of a race or variety.

Q.5 Why is DNA copying an essential part of the process of reproduction?

Sol. DNA copying is an essential part of the process of reproduction because DNA contains the coded genetic characteristics which are transferred from parents to offspring and some variations also produced in offspring. The variations in the copy of DNA increase the survival chance of an organisms in any change in conditions.

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Q.1 How is the process of pollination different from fertilization?

Sol. Pollination: The process of transfer f pollen grain from anther to stigma of same flower or another flower, is called pollination. In this process, fusion of two cells do not take place. While

Fertilization: The process of fusion of male and female gametes and form zygote is called fertilisation. In this process, Fusion of two cells take place.

Q.2 How is the role of seminal vesicles and prostate gland?

Sol. Seminal vesicles and prostate gland are the part of male reproductive system. Their functions are:
(i) Both seminal vesicle and prostate gland secretes fluids and add to vas deferens and form a part of the semen. It makes the path smooth through which sperms are transported from the testes.
(ii) These secretion provide nutrition to the sperms in the form of fructose, calcium and some enzymes.

(iii) It protects the sperms from the acids present in the urethra.

Q.3 What are the changes seen in girls at the time of puberty?

- Sol. The changes seen in girls at the time of puberty are:
- (i) Increase in size of mammary glands or breasts.
- (ii) Menstruation starts.
- (iii) Hairs grow under armpits and pubic regions.
- (iv) Extra fat deposited in thighs and hips.
- (v) Ovaries start to release eggs.
- (vi) Size of uterus and ovary increases.

Q.4 How does the embryo get nourishment inside the mother's body?

Sol. In mother's body, the embryo gets nutrition like- glucose, oxygen and other substance from the mother's blood. This blood is transferred to embryo via the disc-shaped tissue called placenta which connects the mother body and embryo.

Q.5 If a woman is using a copper- T, will it help in protecting her from sexually transmitted disease?

Sol. No, using a copper-T will not help a woman to protect her from sexually transmitted disease. Copper-T is a contraceptive method which prevents implantation of the zygote on the wall of uterus. It cannot stop the contact of body fluid.