**SYMBIOSIS SCHOOL, NASHIK**

**STD : X TERM I (2020-21)**

**SUB : BIOLOGY L.NO 8 HOW DO ORGANISMS REPRODUCE**

**Concepts :** **1. Importance of reproduction**

**2. DNA copying**

**3. Importance of variations**

**4. Types of reproduction : Asexual and Sexual**

**5. Types of Asexual Reproduction**

**Answers to the Textbook Questions**

1. How does reproduction help in providing stability to the population of species?

Ans. i) Reproduction is the process by which new organisms of same species are produced. They take the place

of the old organisms that die. This maintains the size of the population.

ii) Reproduction also helps in continuation of species and prevent it from getting extinct. This helps in

continuation of life on earth.

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

OR

Why is DNA copying essential part of the process of reproduction?

Ans. i) Chromosomes in the nucleus of the cell contain information for inheritance of characters from parents

to the offspring in the form of DNA. DNA is the information source for making proteins.

ii) If the information is changed, different proteins will be made. Different proteins will eventually lead to

the altered body design.

Therefore, the basic event in the reproduction is the creation of a DNA copy.

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

Ans. i) Populations of organisms fill well defined places, or niches, in the environment, using their ability to

reproduce. However niches can change because of the reasons beyond the control of the organsms.

ii) If a population of reproducing organisms were suited to a particular niche and if the niche were

drastically altered, the population could be wiped out.

iii) If some variations were present in some individuals in these population, there would be some chance

for them to survive.

iv) For eg. If there were a population of bacteria living in temperate waters and the temperature of the

water increases, most of these bacteria would die. But if there are few variants resistant to heat , they

would survive and grow further.

Thus, variations are useful for the survival of the species over a period of time.

4. How are modes of reproduction different in unicellular and multicellular organisms?

Ans.

|  |  |  |
| --- | --- | --- |
|  | **Reproduction in unicellular organisms** | **Reproduction in multicellular organisms** |
| 1. | There are no specialized cells for reproduction. | There are specialized cells for reproduction |
| 2. | They use simple methods of reproduction. | They use complex methods of reproduction. |
| 3. | They divide by cell to cell division. | They cannot divide by cell to cell division. |

5. How does binary fission differ from multiple fission?

Ans.

|  |  |  |
| --- | --- | --- |
|  | **Binary fission** | **Multiple fission** |
| 1. | Two daughter cells are produced | Many daughter cells are produced |
| 2. | The nucleus divide into two , then the cell divides. | The nucleus divide many times ,but the cell does not divide. |
| 3. | Cyst is not formed. | Cyst is formed. |
|  | Eg. Amoeba | Eg. Plasmodium |

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

Ans. Vegetative propagation is practiced for some plants because :

i) The plants that have lost the ability to produce seeds can be grown.

ii) The plants bear fruits and flowers earlier.

iii) All the plants produced are genetically identical.

iv) Large number of plants can be produced.

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

Ans. The benefits of spore formation are as follows :

i) Spores provide protection to the organisms during unfavourable conditions.

ii) Spores are dispersed to larger distances, so help the organism to grow in wide habitat.

iii) All the organisms are genetically identical.

iv) Large number of organisms are produced.

8. Why more complex organisms cannot give rise to new individuals through regeneration?

Ans. i) Regeneration is carried out by specialized cells called regenerative cells which are present in specific

parts of the body. These cells proliferate and make large number of cells. From this mass of cells,

different cells undergo changes to become various cell types and tissues.

ii) In more complex organisms, all the cells do not have the capacity of regeneration. So more complex

organisms cannot give rise to new individuals through regeneration.