1. Why is reproduction essential for organisms?
Ans: Reproduction is the ability of living organisms to produce a young one similar to itself. It ensures continuity of a species generation after generation. Reproduction introduces variation in the organisms. Useful variations are essential for adaptation and evolution. Therefore, it is essential for organisms.

2. Which Is a better mode of reproduction: sexual or asexual? Why?
Ans: Sexual reproduction is a better mode of reproduction than asexual mode because the former contributes to the evolution of the species by introducing variation in a population and occurs much more rapidly. Variation in a population occurs because of the fusion of male and female gametes (sexual reproduction) carrying different sets of chromosomes.

3. Why is the offspring formed by asexual reproduction referred to as clone?
Ans: Asexual reproduction is a type of reproduction in which a single individual is capable of producing offspring. These offspring are not only genetically and morphologically similar to one another but also similar to their parent. Clone is the term given to individuals that are genetically and morphologically similar. Thus the offspring produced by asexual reproduction are called clones.

4. Offspring formed due to sexual reproduction have better chances of survival. Why? Is this statement always true?
Ans: The offspring that are produced by sexual reproduction are not genetically identical to their parents. They exhibit variations because they receive chromosomes from two different parents. Since they show variation, they are highly adapted to the changing environment. Asexually produced organisms are genetically identical and all organism show similar adaptations. So, during any calamity, there is a possibility that the whole generation would destroy leading to extinction of species. However, this statement is not true always because of some inborn genetic disorder due to which organism have a risk in their survival, e.g., Haemophilia.

5. How does the progeny formed from asexual reproduction differ from those formed by sexual reproduction?
Ans: Production of offspring by a single parent without the formation and fiision of gametes is called asexual reproduction. It involves only mitotic cell division that gives rise the daughter cells which are genetically identical to the parent cell. Sexual reproduction is the production of offspring by two parents, male and female. It involves meiotic cell divisions producing haploid nuclei which on fusion produce offspring that are genetically different from their parents.

6. Distinguish between asexual and sexual reproduction. Why is vegetative reproduction also considered as a type of asexual reproduction?
Ans: The difference between asexual and sexual reproduction are as follows:

Asexual reproduction

1. It occurs only in invertebrates and lower chordates.
2. It is always uniparental.
3. Gametes are not formed
4. It involves only mitosis.
5. Daughter organisms are genetically identical to the parent.
6. Since there is no variation, so it does not contribute to evolution of the species.

Sexual reproduction

1. It occurs almost in all types of animals.
2. It is usually biparental.
3. Two types of gametes are formed.
4. It involves both meiosis and mitosis.
5. Daughter organisms genetically differ from their parents.
6. Because of variations, it contributes to the evolution of species.

In plants asexual reproduction is called vegetative reproduction because vegetative plant parts like rhizome, runner, sucker, tuber, bulb all are capable of producing off springs These parts give rise to daughter individuals without the involvement of two parents.

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