

Class: 12
Subject: Biology
Topic: Reproduction in organisms
No. of Questions: 18

Q1. Offspring formed due to sexual reproduction have better chances of survival. Why? Is this statement always true?

Ans. In sexual reproduction, genetic variation occurs among the offsprings, which may adapt better with the environment.

Hence the statement is true for maximum.

Q2. Why is the offspring formed by asexual reproduction referred to as clone?

Ans. Because the offsprings formed by asexual reproduction are genetically identical to their parents.

Q3. How does the progeny formed from asexual reproduction differ from those formed by sexual reproduction?

Ans. Progeny from asexual reproduction have similar genetic make-up and are exact copies of their parents, i.e., clone of the parent.

Variation is absent.

Progeny is less adaptable to changes in environment.

Progeny from sexual reproduction have different genetic make-up and are dissimilar to the parent.

Variation occurs in progeny.

Progeny is more adaptable to changes in environment.

Q4. Which is better mode of reproduction sexual or asexual?

Ans: Sexual mode of reproduction is better mode than asexual because in sexual mode there is fusion of male and female gametes through which we get variation in offspring as compared to their parents.

Q5. Name an organism where cell division in itself is a mode of reproduction.

Ans. Amoeba is an organism where cell division in itself is a mode of reproduction.

Q6. Name an alga that reproduces asexually through zoospores.

Ans. Chlamydomonas

Q7. Differentiate between the two cells enclosed in a mature male gametophyte of an angiosperm.

Ans.

Generative cell	Vegetative cell
It is small and floats in the cytoplasm of the vegetative cell. It is spindle shaped with dense cytoplasm and nucleus. It divides to form male gamete.	It is bigger, has abundant food material and a large irregularly shaped nucleus.

Q8. Differentiate between mRNA and tRNA.

Ans.

mRNA		tRNA
1.	mRNA or messenger RNA acts as a template for the process of transcription.	tRNA or transfer RNA acts as an adaptor molecule that carries a specific amino acid to mRNA for the synthesis of polypeptide.
2.	It is a linear molecule.	It has clover leaf shape.

Q8. Explain isogametes, juvenile phase.

Ans. Isogamete : One of a pair of conjugating gametes.

Juvenile Phase : It is the period of growth before maturity when sex organs are not functional.

Q9. Write a note on : Bulbils, clone, embryogenesis, gametogenesis.

Ans. Bulbils : These are small, fleshy buds which develop into new plants as in Agave.

Clone : A group of organism derived from a single individual and hence morphologically and genetically similar.

Embryogenesis : The process of development of embryo from zygote.

Gametogenesis: The process of formation of male and female gametes.

Q9. Explain why meiosis and gametogenesis are always interlinked ?

Ans. Gametogenesis is the process of the formation of haploid gametes inside the gametangia. The normal body of organisms is usually diploid but the gametes are haploid. Thus, gametes are formed as a result of meiosis so that their chromosome number becomes haploid.

Q10. Differentiate between gametogenesis and embryogenesis.

Ans. Gametogenesis occurs inside the gametangia where meiosis occurs resulting in the formation of gametes. Embryogenesis is the development of zygote into an embryo. During this process, the zygote divides by mitotic divisions.

Q11. What is a bisexual flower? Collect five bisexual flowers from your neighbourhood and with the help of your teacher find out their? Common and scientific names.

Ans. A bisexual flower possesses both stamens as well as carpels.

Q12. Why offspring of oviparous animals are at a greater risk as compared to offsprings of viviparous animals?

Ans. Oviparous animals lay eggs in a safe place in the environment. In an open area, the eggs are not always safe and the offsprings are always at a risk. The viviparous animals give birth of young ones. The fertilizes eggs of oviparous animals (examples – birds, reptiles, etc.)

undergo a period of incubation and then their young ones hatch out. This period has a risk of predators. In case of viviparous animals (examples – mammals including human beings), the zygote develops into a young one inside the body of the female individual where it gets proper nourishment, care and protection. Therefore, the chances of survival of young ones are more in viviparous animals as compared to those of oviparous animals.

Q13. What is the major difference you observe in offsprings produced by asexual reproduction and in the progeny produced by sexual reproduction?

Ans. The offsprings produced by asexual reproduction are genetically similar to their parents and do not show variation. But the progeny produced by sexual reproduction show genetic variation and difference from either of the two parents as well as among themselves.

Q14 How do roots take part in vegetative propagation?

Ans. Modified tuberous roots, which possess buds, serve as natural method of vegetative propagation. These roots develop leafy shoots (called slips) aboveground and adventitious roots underground.

Q15. Name at least three changes seen in human females that are indicative of reproductive maturity.

Ans. 1. Body is smaller, less muscular and weaker. 2. Beard, moustache and chest hair present. 3. Skin is more hairy.

Q16. Coconut palm is monoecious while date palm is dioecious. Why are they called so?

Ans. In coconut palm, both male and female flowers develop on the same individual. This condition is called monoecious. In date palm, the male and female flowers develop on separate individuals. This condition is called dioecious.

Q17. Differentiate between the following:

- A. Zoospore and zygote
- B. Syngamy and fertilization

Ans. (A)

Zoospore is a haploid and motile spore formed during asexual reproduction in lower plants and fungi. The zygote is a diploid and nonmotile cell formed due to fusion of male and female gametes in sexual reproduction.

(B) Syngamy is actual fusion of male and female gametes whereas fertilization includes all the associated events that ultimately lead to syngamy.

Q18. In angiosperms, the pollen germinates to produce pollen tube that carries two gametes. What is the purpose of carrying two gametes when single gamete can fertilize the egg?

Ans. Angiosperms perform double fertilization in which one male gamete fuses with the egg to form zygote and the other gamete fuses with the diploid secondary nucleus to form the triploid endosperm nucleus.

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