
#464864

Topic: Types of animal reproduction

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

Solution

Reproduction is production of offspring via sexual or asexual method and thus, is responsible for inheritance of genetic characters and to create variations. It includes DNA replication, the carrier of genetic information, and its transmission from parent to offspring. This ensures inheritance of species specific genetic characters from one generation to next and thereby maintain the species stability. Also, ratio of death and birth maintain the species stability. Since, reproduction is the only method to transmit DNA from one generation to next and to give birth to offspring, it is inevitable for maintaining species stability.

#525947

Topic: Types of animal reproduction

Why is reproduction essential for organisms?

Solution

Reproduction is the process of production of progeny by sexual or asexual means and ensures continuity of species despite mortality caused by biotic (competition, predation etc.) and abiotic factors (natural calamities). It helps to create recombination by the process of meiosis. It is a source of genetic recombination.

#525948

Topic: Types of animal reproduction

Which is a better mode of reproduction sexual or asexual? Why?

Solution

Sexual reproduction is characterised by meiosis and fertilisation which in turn add genetic diversity to the existing species. Genetic diversity serves as raw material for natural selection and hence, for evolution. Asexual reproduction produces only clones of parent and maintains the existing characters only, no genetic diversity or a new character is added making sexual mode better one.

#525949

Topic: Asexual reproduction

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

Solution

Clone refers to a group of genetically identical organisms. Crossing over during meiosis and random fertilization of male and female gametes add genetic diversity to sexually reproducing organisms. Asexual reproduction skips meiosis and fertilization of male and female gametes and therefore, produces genetically identical progeny i.e. clone by single parent cell.

#525951

Topic: Types of animal reproduction

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

Solution

Yes, it's true. Sexual reproduction is characterized by meiosis and fertilization which in turn add new genetic combination (i.e. new characters) to the existing species. Genetic diversity serves as raw material for natural selection which favours the characters that impart a survival advantage to individuals. Accumulation of these adaptive characters over generation makes the population better adapted to prevailing condition and imparts survival advantage. It is not always true, for e.g. take the case in which two parents are heterozygous for a specific trait/allele (suppose sickle-cell anaemia). The parents are not affected because they still have one good allele. However, if their offspring acquires two defective alleles from both the parents (i.e. homozygous for the sickle cell anaemia allele) then the offspring will have a very short lifespan. Hence, it is not necessary that an offspring formed due to sexual reproduction will have better chances of survival.

#525953

Topic: Types of animal reproduction

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

Solution

Crossing over during meiosis and random fertilization of male and female gametes add genetic diversity to sexually reproducing organisms. The progeny of sexually reproducing organisms carry parental as well as new genetic combination and therefore, have new phenotypic traits along with parental ones. Asexual reproduction skips meiosis and fertilization of male and female gametes and single parent cell is involved in reproduction. Therefore, asexually reproducing organism produces genetically identical progeny i.e. clone.

#525955

Topic: Vegetative propagation

What is vegetative propagation? Give two suitable examples.

Solution

Vegetative propagation is a type of asexual reproduction that produces progeny by any vegetative propagule (rhizome, tubers, suckers etc.) without gamete formation and fertilization of male and female gametes. For example, Tuber of potato, the rhizome of ginger.

#525957

Topic: Types of animal reproduction

Define:

- (a) Juvenile phase
- (b) Reproductive phase
- (c) Senescent phase

Solution

- (a) Juvenile phase: It is the period of growth in an individual organism after its birth and before it reaches reproductive maturity.
- (b) Reproductive phase: It is the period when an individual organism reproduces sexually.
- (c) Senescent phase: It is the period when an organism grows old and loses the ability to reproduce.

#525958

Topic: Types of animal reproduction

Higher organisms have resorted to sexual reproduction in spite of their complexity. Why?

Solution

Sexual reproduction is complex (long and energy consuming) process characterized by meiosis and fertilization which in turn add new genetic combination (i.e. new characters) to the existing species. Genetic diversity serves as raw material for natural selection which favors the characters that impart survival advantage to individuals. Accumulation of these adaptive characters over generation makes the population better adapted to prevailing condition and imparts survival advantage.

#525978

Topic: Asexual reproduction

Differentiate between a zoospore and a zygote.

Solution

Zoospore is a flagellated motile asexual spore produced asexually inside zoosporangium by certain algae, water molds and other protists. Zygote (mostly non motile cell) is product of fusion of male and female gamete and is produced sexually.

#634598

Topic: Types of animal reproduction

What is reproduction?

Solution

Reproduction is the process by which new organisms (offsprings) are produced from organisms of the same kind.