

Science

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(Chapter – 9) (Heredity and Evolution)

(Class – X)

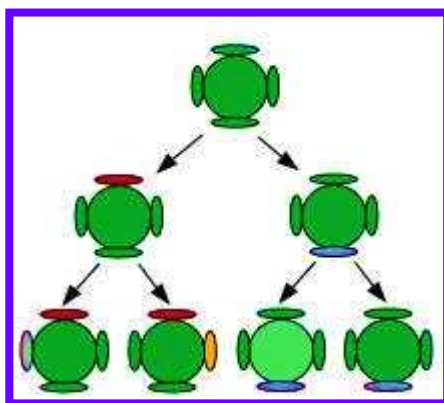
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Question 1:

If a trait A exists in 10% of a population of an asexually reproducing species and a trait B exists in 60% of the same population, which trait is likely to have arisen earlier?

Answer 1:

In asexual reproduction, the reproducing cells produce a copy of their DNA through some chemical reactions. However, this copying of DNA is not accurate and therefore, the newly formed DNA has some variations.



It can be easily observed in the above figure that in asexual reproduction, very few variations are allowed. Therefore, if a trait is present in only 10% of the population, it is more likely that the trait has arisen recently. Hence, it can be concluded that trait B that exists in 60% of the same population has arisen earlier than trait A.

Question 2:

How does the creation of variations in a species promote survival?

Answer 2:

Sometimes for a species, the environmental conditions change so drastically that their survival becomes difficult. For example, if the temperature of water increases suddenly, most of the bacteria living in that water would die. Only few variants resistant to heat would be able to survive. If these variants were not there, then the entire species of bacteria would have been destroyed. Thus, these variants help in the survival of the species.

However, not all variations are useful. Therefore, these are not necessarily beneficial for the individual organisms.