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Sub. Biology

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1. Give an example of characteristics being used to determine how close two species are in evolutionary terms.

Let us take the instance of humans and apes. Each of them have similar body style. Hair and exocrine gland glands are gift in each the animals. Hence, these 2 animals are closely connected in organic process term. Currently take some common characters between a fish and a person. Rachis, brain box and jaws are gift in each of them. However fish and man look entirely different from one another. Hence, they're not closely connected in organic process term; rather are like distant relatives.

2. Can the wing of a butterfly and the wing of a bat be considered homologous organs? Why or why not?

Homologous organs perform completely different functions and have different look however share common basic structural structure. The origin wings of a butterfly are composed of polysaccharide membrane, whereas wings of a bat are composed of bony skeleton. Hence, these aren't homologous organs rather analogous organs.

3. What are fossils? What do they tell us about the process of evolution?

Fossils are called the preserved remains of animals or plants or other organisms from the distant past. These fossils tell us about a lot of extinct animals and also give insights into how evolution might have occurred. Fossils can be used to build an organism's evolutionary history. The pattern of fossil distribution gives us an idea of the time in history when various species were formed or become extinct. Fossil also helps trace some animal's evolutionary history.

4. Why are human beings who look so different from each other in terms of size, color and looks said to belong to the same species?

While human beings vary widely in size, color and appearance, their genetic makeup is similar. The variations in size, color and appearance are the result of these characteristics different levels of expression. However, human beings have the same organization at the genetic level. Therefore they all belong to the same species.

5. In evolutionary terms, can we say which among bacteria, spiders, fish and chimpanzees have a 'better' body design? Why or why not?

No, we can't say there's a better body design as these organisms evolved to survive in the environment according to their needs. If a chimpanzee has strong limbs capable of multiple actions, the bacteria can survive in extreme conditions where it is impossible for other organisms. Therefore there is no better design of the body.