



# BIOLOGY

## NCERT - NCERT BIOLOGY(HINGLISH)

### HEREDITY AND EVOLUTION

#### Exercise

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?



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



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3. How do Mendel's experiments show that traits may be dominant or recessive?



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4. How do Mendel's experiments show that traits are inherited independently?



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5. A man with blood group A marries a woman with blood group O and their daughter has blood group O. Is this information enough to

tell you which of the traits – blood group A or O – is dominant? Why or why not?



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6. How is the sex of the child determined in human beings?



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7. What are the different ways in which individuals with a particular trait may increase

in a population?



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**8.** Why are traits acquired during the life-time of an individual not inherited?



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**9.** Why are the small numbers of surviving tigers a cause of worry from the point of view of genetics?



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**10.** What factors could lead to the rise of a new species?



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**11.** Will geographical isolation be a major factor in the speciation of a self-pollinating plant species? Why or why not?



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**12.** Will geographical isolation be a major factor in the speciation of an organism that reproduces asexually? Why or why not?



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



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



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



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



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



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**18.** A Mendelian experiment consisted of breeding tall pea plants bearing violet flowers with short pea plants bearing white flowers. The progeny all bore violet flowers, but almost half of them were short. This suggests that the genetic make-up of the tall parent can be depicted as

A. TTWW

B. TTww

C. TtWW

D. TtWw

**Answer:**



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**19.** An example of homologous organs is

- A. our arm and a dog's fore-leg.
- B. our teeth and an elephant's tusks.
- C. potato and runners of grass.
- D. all of the above.

**Answer:**



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**20.** In evolutionary terms, we have more in common with

A. a Chinese school-boy.

B. a chimpanzee.

C. a spider.

D. a bacterium.

**Answer:**



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21. A study found that children with light-coloured eyes are likely to have parents with light-coloured eyes. On this basis, can we say anything about whether the light eye colour trait is dominant or recessive? Why or why not?



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**22.** How are the areas of study – evolution and classification – interlinked?



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**23.** Explain the terms analogous and homologous organs with examples.



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**24.** Outline a project which aims to find the dominant coat colour in dogs.



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**25.** Explain the importance of fossils in deciding evolutionary relationships.



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**26.** What evidence do we have for the origin of life from inanimate matter?



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**27.** Explain how sexual reproduction gives rise to more viable variations than asexual reproduction. How does this affect the evolution of those organisms that reproduce sexually?



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**28.** How is the equal genetic contribution of male and female parents ensured in the progeny?



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**29.** Only variations that confer an advantage to an individual organism will survive in a population. Do you agree with this statement? Why or why not?



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