BIOLOGY

NCERT - NCERT BIOLOGY(ENGLISH)

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. 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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19. 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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20. 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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21. How are the areas of study – evolution and classification – interlinked?

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22. Explain the terms analogous and homologous organs with examples.

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

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24. Explain the importance of fossils in deciding evolutionary relationships.

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

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

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28. 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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