



BIOLOGY

BOOKS - CAMBRIDGE BIOLOGY (KANNADA ENGLISH)

HEREDITY AND EVOLUTION

Questions Hour

1. If trait A exists in 10% of a population of an asexually reproducing species and 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 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 an organism that reproduces asexually? Why or Why not?



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12. Give an example of characteristics being used to determine how close two species are the evolutionary terms?



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



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



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15. 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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16. In evolutionary terms, can we say which among bacteria, spiders, fish and chimpanzees have better body design? Why or not?



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17. A Mendelian experiment considered 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 makeup of the tall parent can be depicted as

A. TTww

B. TtWW

C. TtWw

D. TtWW

Answer:



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18. An example of homologous organs is

- A. Our teeth and an elephant's tusks
- B. Potato and runners of grasses
- C. All of the above.
- D. Our teeth and an elephant's tusks

Answer:



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19. In evolutionary terms, we have more in common with

A. A chimpanzee

B. A spider

C. A bacterium

D. A Chinese school - boy.

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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Additional Questions Choose The Correct Answer

1. Which type of variation is inherited ?

- A. Somatic variation
- B. Germinal variation
- C. Both somatic & germinal
- D. None of these

Answer: B



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2. The organ which perform different function but have the same basic structure are called.

- A. Vestigial organim
- B. Analogous organs
- C. Homologous organs
- D. Analytic organs

Answer: C



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3. Wings of an insect & a bird are example of

- A. Analogous organs

B. Vestigial organs

C. Homologous organs

D. Analytic organs

Answer: A



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4. Vermiform appendix is an example of

A. Analogous organ

B. Vestigial organ

C. Homologous organ

D. Analytic organ

Answer: B



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5. A trait of an offspring is influenced by

A. DNA of mother gamete

B. DNA of father gamete

C. Both DNA'S of father and mother gamete

D. Neither of mother or father gamete DNA

Answer: C



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6. On crossing a tall plant with a dwarf plant Mendel found that the ratio of dwarf plants in F₂ generation was

A. 0.25

B. 0.4

C. 0.75

D.

Answer: A



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7. Gamete cells are

A. diploid

B. Haploid

C. Either diploid or haploid

D. None of there

Answer: B



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8. Human baby boy will have its 23rd chromosome pair as

A. XX

B. XY

C. YY

D. XYY

Answer: A



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9. Who proposed the hypothesis that life must have developed from the simple inorganic molecules which were present on earth soon after it was formed?

A. Miller

B. Urey

C. Drawin

D. Haldane

Answer: D



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10. Mendel observed 7 pairs of contrasting in
pisum sativum one of the following is not a
prt of that. Find out

A. Tall & dwarf

B. Yellow and green seed colour

C. Terminal and axial flower

D. Smooth and rough stem

Answer: D



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Additional Questions Answer The Following Questions

1. Define Gene?



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2. What is a sex chromosome?



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3. Define heredity



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4. Define variation.



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5. What are the uses of Genetics ?



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6. Name the two laws of inheritance postulated by Mendel?



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7. What do you mean by evolution?



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8. Define monohybrid inheritance



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9. Define Artificial Selection



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10. An individual cannot pass on to its progeny the experiences of its lifetime “ Justify the statement with the help of an example and also give reason for the same



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11. What is meant by speciation? List four factors that could lead to speciation. Which of these cannot be a major factor in the

speciation of a self-pollinating plant species.

Give reason to justify your answer.



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12. The sex of the children is determined by what they inherit from their father and not their mother “Justify.



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13. Describe briefly four ways in which individuals with a particular trait may increase in a population?



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



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



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16. Explain the terms

(i) Speciation (ii) Natural selection



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17. Give an example of body characteristics used to determine how close two species are in terms of evolution and explain it



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18. Give one example each of characters that are inherited and the ones that are acquired in humans. Mention the difference between the inherited and the acquired characters.



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19. Define allelomorph?



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20. What is mutation ?



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Unit Test Fill In The Blanks

1. Vermiform appendix is an example of.....



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2. Gamete cells are



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Unit Test Answer The Following Questions

1. Define variation.



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2. Define monohybrid inheritance



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3. What factor could lead to the rise of a new species?



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4. What are the different ways in which individuals with a particular trait may increase in a population?



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5. Explain the term (I) Speciation (II) Natural selection IV.



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6. How are the areas of study-evolution and classification interlinked ?



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



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