



BIOLOGY

BOOKS - SUPER COMPANION MADE EASY

HEREDITY AND EVOLUTION

Textbook Questions

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?



[Watch Video Solution](#)

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



[Watch Video Solution](#)

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



[Watch Video Solution](#)

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



[Watch Video Solution](#)

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?



Watch Video Solution

6. How is the sex determined in human beings?



Watch Video Solution

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

in a population?



Watch Video Solution

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



Watch Video Solution

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



[Watch Video Solution](#)

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



[Watch Video Solution](#)

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



[Watch Video Solution](#)

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



Watch Video Solution

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



Watch Video Solution

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



Watch Video Solution

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



Watch Video Solution

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?



Watch Video Solution

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



Watch Video Solution

Textbook Exercise Questions

1. 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: C



Watch Video Solution

2. An example of homologous organ is

A. Our arm and a dog's foreleg

B. Our teeth and an elephant's tusk

C. Potato and runners of grass

D. all the above

Answer: B



Watch Video Solution

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

A. A Chinese school boy

B. a Chimpanzee

C. a spider

D. a bacterium

Answer: A



Watch Video Solution

4. 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?



Watch Video Solution

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



Watch Video Solution

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



Watch Video Solution

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



Watch Video Solution

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



Watch Video Solution

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



Watch Video Solution

10. 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?



Watch Video Solution

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



Watch Video Solution

12. 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 ?



Watch Video Solution

Additional Questions

1. A baby girl receives her X chromosomes from her

A. mother

B. father

C. from both father and mother

D. either from father or mother

Answer: C



[Watch Video Solution](#)

2. Which type of variation is inherited ?

- A. Somatic variation
- B. germinal variation
- C. both somatic and germinative
- D. none of these

Answer: B



[Watch Video Solution](#)

3. Wings of an insect and a bird are example of _____ organs

A. Homologous

B. analogous

C. vestigial

D. analytic

Answer: B



Watch Video Solution

4. Gamete cells are

A. Haploid

B. diploid

C. Can be haploid or diploid

D. none of these

Answer: A



Watch Video Solution

5. A trait in a offspring is influenced by the DNA of

A. Mother gamete

B. father gamete

C. gamete of both parents

D. Neither of mother or father

Answer: C



Watch Video Solution

6. Fossils found at deeper layers of earth are

A. Most recent

B. very odd may be more 1000s of years

C. may be recent or odd

D. cannot tell

Answer: B



Watch Video Solution

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

A. XX

B. XY

C. YY

D. XYY

Answer: B



Watch Video Solution

8. 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. Darwin

B. Miller

C. Urey

D. Haldane

Answer: D



Watch Video Solution

9. 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. 0.75

C. 0.5

D. 6.6

Answer: A



Watch Video Solution

10. Genetics is a branch of biology which deals with the study of

A. Heredity and variation

B. fossils

C. evolution

D. hybridization

Answer: A



Watch Video Solution

Short Questions

1. Define Natural Selection



[Watch Video Solution](#)

2. Define variation.



[Watch Video Solution](#)

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



[Watch Video Solution](#)

4. Define homozygous



[Watch Video Solution](#)

5. Define heterozygous



[Watch Video Solution](#)

6. Define Speciation



Watch Video Solution

7. Define monohybrid inheritance



Watch Video Solution

8. Define Artificial Selection



Watch Video Solution

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



Watch Video Solution

10. What are the uses of Genetics ?



Watch Video Solution

11. Define gene. What are its important characteristics?



Watch Video Solution

12. What is mutation ?



Watch Video Solution

13. List the significance of variations.



Watch Video Solution

14. What are the components of a chromosome?



[Watch Video Solution](#)

Long Questions

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



[Watch Video Solution](#)

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



[Watch Video Solution](#)

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



[Watch Video Solution](#)

4. Explain Darwin's Theory of Evolution



[Watch Video Solution](#)

Higher Order Thinking Skills

1. Chromosomes can be identified easily during metaphase. How ?



[Watch Video Solution](#)

2. DNA is known as polynucleotide. Why ?



[Watch Video Solution](#)

3. Appendix in human is considered as vestigial. Why?



[Watch Video Solution](#)

4. When Mendel crossed a Tall plant with dwarf plant, no medium height plants were

obtained in F1 generation. Explain.



Watch Video Solution

5. Why are males called heterogametic ?



Watch Video Solution

6. Asexually reproducing organisms are capable of showing heredity features. Explain



Watch Video Solution

7. Evolution should not be equated with 'progress' . Clarify.

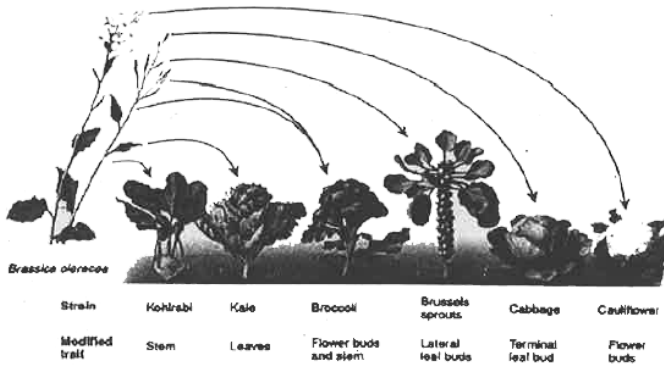


[Watch Video Solution](#)

Value Based Questions

1. Study the picture below 'variation under domestication of wild cabbage plant and

describe.



[View Text Solution](#)

2. Mention the advantages of selecting the pea plant for experiment, by Mendel.

[Watch Video Solution](#)

3. Try to trace your family tree. Family tree with photo frames (3 generations).



View Text Solution