



BIOLOGY

BOOKS - UNITED BOOK HOUSE

HEREDITY AND COMMON GENETIC DISEASES

Exercise

1. A pair of contrasting character is called-

A. phenotype

B. genotype

C. allele

D. gene

Answer:



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2. When two individuals are similar in external appearance but different in their genetic makeup they are called-

A. genotype

B. phenotype

C. homozygous

D. heterozygous

Answer:



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3. The term 'gene' was coined by-

A. Maclintock

B. Johannsen

C. Morgan

D. Watson and Crick

Answer:



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4. How many gametes will be formed from
TtYyRr?

A. 8

B. 16

C. 20

D. 32

Answer:



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5. The visible characteristics of an organism is called-

A. homozygaous

B. heterozygous

C. genotype

D. phenotype

Answer:



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6. Who is the father of genetics?

A. Batesan

B. Gregor Johann Mendel

C. Morgan

D. Johannsen

Answer:



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7. If hybridization is made between a hybrid tall pea plant and a pure tall pea plant, the percentage of tall offspring in F₁ generation might be-

A. 0.25

B. 0.5

C. 0.75

D. 1

Answer:



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8. If hybridization is made between two hybrid tall pea plant, the dwarf pea plants in F1 generation will be-

A. 0.25

B. 0.5

C. 0.75

D. 1

Answer:



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9. The phenotype ratio of Mendel's monohybrid cross in F₂ generation is-

A. 1:1:1:1

B. 9:3:3:1

C. 3:1

D. 1:2:1

Answer:



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10. Genes located on the same locus but having different expressions are-

A. multiple alleles

B. polygenes

C. oncogenes

D. codominants

Answer:



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11. Pairs of alleles that separate during gamete formation illustrate the-

A. Law of independent assortment

B. Law of the product

C. Law of the sum

D. Law of segregation

Answer:



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12. A representaiton of phenotypic ratios of offspring is given by the-

A. independent assortment

B. Law of the product

C. Punnett square

D. Law of the sum

Answer:



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13. Pairs of alleles that distribute randomly in gametes without regard to other pairs of alleles illustrate the-

A. Law of independent assortment

B. Law of the product

C. Law of the sum

D. Law of segregation

Answer:



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14. Mendel's principles are related to-

A. reproduction

B. heredity

C. evolution

D. variation

Answer:



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15. Cross between homozygous recessive and heterozygous plant is-

A. monohybrid cross

B. dihybrid cross

C. back cross

D. test cross

Answer:



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16. Which one is male sex chromosome set?

A. XX

B. XY

C. YY

D. None of these

Answer:



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17. Which one is Mendel's first Law of heredity?

A. Law of segregation

B. Law of dominance

C. Law of independent assortment

D. Law of incomplete dominant

Answer:



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18. If hybridization is made between two *Mirabilis jalapa* plants, one pure red flowering plant crossed with another white flowering plant. In F₁ generation-

A. all are white flowering plant

B. all are red flowering plant

C. all are pink flowering plant

D. none of these

Answer:



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19. In Mendel's peas, tall is dominant to dwarf & yellow is dominant to green. A pure tall, yellow plant is crossed to a pure dwarf green

plant. What will be phenotypic ratio in F2 generation?

A. 1 : 2 : 2 : 4 : 1 : 2 : 1 : 2 : 1

B. 3 : 1

C. 1 : 2 : 1

D. 9 : 3 : 3 : 1

Answer:



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20. Give the Law of segregation and Law of independent assortment. What is Royal haemophilia?



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21. Explain why Mendel has chosen pea plants for his experiment? Give four pairs of contrasting character in pea plant studied by Mendel.



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22. Describe Mendel's monohybrid experiment taking tall and dwarf pea plant and give genotype, phenotype ratio from that cross.



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23. Give the reasons behind Mendel's success.

What is variation and mutation?



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24. Show with a cross how the phenotypical and genotypical ratio become same in F_2 generation of Mendel's monohybrid cross?



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25. When a hybrid black guineapig is crossed with a pure white guineapig the offspring of F_1 will be



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26. Describe the sex determination process in man. What is criss-cross inheritance?



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27. What are the symptoms of Haemophilia?



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28. What are the causes of Thalassemia? Give two symptoms of Thalassemia.



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29. What is the cause of colour blindness? If a carrier colour blind woman marry a normal man, what will be all possible progeny?



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30. What is Royal Haemophilia and Christmas disease? What is genetic counselling?



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Example

1. What is Heredity?



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2. What is mutation?



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3. What is Cloning?



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4. What is Homozygous?



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5. What is Hetrozygous?



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6. What is Phenotype?



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7. What is Genotype?



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8. What is Locus?



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9. What is Dominant and Recessive?



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10. What is factor?



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11. What is hybrid?



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12. What is Pure line?



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13. What is recessive gene?



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14. What is the recessive character transmitted through autosome?



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15. What is the Autosomal dominant inherited character?



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16. What is Colour blindness?



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17. What is the Symptoms of Haemophilia?



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18. What is Hemolytic Anemia?



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19. What is Test cross?



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20. What is Back cross?



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21. Mention one dominant trait of Drosophila.



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22. Give one example of inborn error in metabolism.



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23. What is sickle-cell anaemia?



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