



BIOLOGY

BOOKS - SANTRA BIOLOGY (BENGALI ENGLISH)

HEREDITY AND COMMON GENETIC DISEASE

Mcqs

1. Mendel's choice contrasting characters from pea plant are

A. 7 pairs

B. 9 pairs

C. 6 pairs

D. 8 pairs

Answer:



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2. The ratio of phenotype in monohybrid cross of Mendel was

A. 1 : 3

B. 3 : 2 : 1

C. 1 : 2

D. 3 : 1

Answer:



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

A. 1 : 2 : 1

B. 1 : 1

C. 3 : 1

D. none of them

Answer:



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4. Phenotype result of mendel's dihybrid cross will be

A. 9 : 3 : 3 : 1

B. 1 : 2 : 2 : 4 : 1 : 2 : 1 : 2 : 1

C. 1 : 2 : 1

D. 1 : 2 : 2 : 4

Answer:



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5. Protonopia is a type of

A. Haemophilia

B. Thalassemia

C. Colourblindness

D. none of them

Answer:



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6. Among the following which one is applicable to a normal male in man?

A. $44A+XY$

B. $44A+XYY$

C. $44A+XX$

D. $44A+XXY$

Answer:



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7. Chromosome theory of inheritance was propose by

A. Morgan

B. Sutton and Bover

C. Mendel

D. Lamarck

Answer:



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8. The pea plants produced from the seeds obtained from a cross between hybrid tall (Tt) and pure dwarf (tt) pea plants will be

- A. All dwarf
- B. All tall
- C. 75% tall, 20% dwarf
- D. 50% tall, 50% dwarf

Answer:



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9. The genetic constitution for which a characteristic feature in an organism is expressed is called

A. Phenotype

B. Genotype

C. Dominance

D. Hybrid

Answer:



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10. The process of fertilization of female gamete with male gamete of the same plant, is called

A. Selfing

B. Back cross

C. test cross

D. hybrid

Answer:



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11. When both the alleles of a gene are equally expressive, is called

A. codominance

B. dominance

C. recessiveness

D. Phenotype

Answer:



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12. The F_2 generation of a cross produced identical phenotypic and genotypic ratio. It is not an expected mendellian result, and can be attributed to

- A. Homologous pairs
- B. Independent assortment
- C. Linkage
- D. Incomplete dominance

Answer:



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13. The first work on genetics was done by

A. lamarch

B. Mendel

C. Vries

D. Darwin

Answer:



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14. The disciplin which deals with the study of inherritance of characters is

A. cytology

B. genetics

C. darwinism

D. evolution

Answer:



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15. A cross between unlike organisms is called

A. test cross

B. heterosis

C. back cross

D. hybrid

Answer:



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16. Genes do not occur in pairs in

A. endosperm cells

B. Zygote

C. Gametes

D. somatic cell

Answer:



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17. Position of gene on chromosome is called

A. locus

B. nucleosome

C. factor

D. cistron

Answer:



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18. Which of the following crosses would produce a genotype ratio 1:2:1 in F_2 ?

A. $Ab \times Ab$

B. $ab \times ab$

C. $Ab \times ab$

D. $AB \times AB$

Answer:



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19. Mendel is popular for postulating

A. Cell theory

B. Laws of inheritance

C. Linkage theory

D. Origin of species

Answer:



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20. The phenomenon which defines the independent assortment is

A. Segregation

B. Dominance

C. Crossing over

D. Linkage

Answer:



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21. Which of the following traits in pea plant is recession

A. Wrinkled seed

B. Yellow coloured seed

C. Purple coloured flower

D. Axial flower

Answer:



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22. How many types of gametes are formed from pea plant having genotype $YyRr$?

A. 1

B. 4

C. 2

D. 3

Answer:



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Fill In The Blanks

1. Phenotypic ratio in monohybrid cross was _____



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2. IN_____the affected person fails to recognise red colour.



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3. Incomplete dominance found in_____plant.



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4. Mendel chosen _____ contrasting characteristics in pea plant.



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5. _____ is a disease created by six linked gene.



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Mention True Or False

1. The another name of haemophilia disease is christmas disease.



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2. Pure tall is denoted by 'TT'.



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3. $44A+XXY$ is normal man's chromosome number.



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4. Protanopia is a type of haemophilia.



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5. Self pollination or cross pollination can be exercised in flowers of pea plant according to the need.



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Very Short Answer Vsa Type Question

1. Who is the father of genetics?



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2. Tt' is homozygous or geterozygous?



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3. What is the genotypic ratio?





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4. Give the ratio of phenotypes in monohybrid cross?



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5. What do you mean by trait?



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6. When a cross taken place between two hybrid black guineapigs, what will be the phenotype ratio of black and white guineapig?



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7. Define character.



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8. What is hybrid?



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9. What do you mean by F_1 generation?



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10. Define F_2 -generation.



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11. What is selfing?



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12. What do you mean by parental generation?



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13. mendel used which organism as his experimental sample?



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14. What were the two contrasting colours of flower considered by Mendel?



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15. Mention the types of colourblindness.



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16. What is the ratio of progenies obtained in case of a cross between a heterozygous

dominant and a homozygous recessive?



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17. Give an example of a plant which shows incomplete dominance in flower colour.



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18. Give the two forms of thalassemia.



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19. Who proposed the chromosomal theory of inheritance?



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20. Give an example of a variation inherited in man along the generation.



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Short Answer Sa Type Question

1. What is heredity?



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2. What is mutation?



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3. What is variation?



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4. Define physiological variation.



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5. What do you mean by continuous variation?



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6. What is hybridization?



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7. What is monohybrid cross?



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8. What do you mean by dihybrid cross?



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9. What is recessive gene?



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10. Define cross pollination.



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11. What is incomplete dominance?



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12. What is dominant gene?



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13. What do you mean by homozygous organism?



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14. What do you mean by heterozygous organism?



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15. What is pure breeding variety?





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16. What is test cross?



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17. State about the mendel's law of segregation.



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18. State two symptoms of thalassemia.



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19. State with example how dominant trait is expressed in the experiment of hybridization.



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20. What is Mendelism?



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Long Answer La Type Question

1. Why did mendel choose pea plants as his experimental organism?



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2. Describe about mendel's work on pea plant.



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3. What are the reasons behind the mendel's success?



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4. What are seven characters of pea plant?
State their contrasting feature in pea plant.



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5. Describe the hybridization technique which was carried out between plant having contrasting features in controlled condition.



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6. What is law of segregation? Describe the events of monohybrid cross of pea plant with checker boards.



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7. What are the explanation of monohybriid cross?



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8. What are the explanation of dihybrid cross?



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9. What is dihybrid cross? Describe the events of dihybrid cross of plant with checkerboard.





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10. Describe the experiments of monohybrid cross in guineapig with checkerboard.



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11. What are the deviation from mendel's law of heredity?



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12. What is law of independent assortment?

Briefly describe the events of dihybrid cross in guineapig with checkerboard.



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13. Describe about the sex determination of human.



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14. What is colourblindness? What are the symptoms of thalassemia?



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15. Brief notes on thalassemia as an autosomal chromosomal disorder and its genetic counselling.



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16. Briefly state about the types of colour blindness. Describe haemophilia in brief.



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17. What is incomplete dominance? State about the incomplete dominance in 4 O'clock plant.



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18. What is variation? Explain about the two variable features in man.



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19. Define mutation. State about the development of variation.



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20. Mention the symptoms of thalassemia disease. In many families mothers are labelled as responsible for the birth of daughter child. Demonstrate with the help of a cross, that this belief is not justified.



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