



BIOLOGY

BOOKS - SUPER COMPANION 5 IN 1

HEREDITY AND VARIATION

One Mark Questions And Answers

1. Give the meaning of the term allele.



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2. What is genetics?



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3. Define Phenotype.



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4. Define genotype.



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5. Give the reason for Down's syndrome.



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6. Define test cross. What is its significance?



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7. If a diploid organism is heterozygous for 4 loci, how many types of gametes can be produced?



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8. Why is the blood group 'O' called as universal donor?



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9. Write the phenotypic ratio of Monohybrid Cross.



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10. Mention the phenotypic ratio of a dihybrid cross.



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11. What are multiple alleles? Give an example.



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12. What genetic principle could be derived from a monohybrid cross?





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13. Which one change in the cause of sickle-cell anaemia?



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14. Name any one plant and its feature that shows the phenomena of incomplete dominance?



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Two Mark And Answers

1. What are multiple alleles? Give an example.



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2. Give the chromosomal constitution and the resulting sex in each of the following syndrome.

(a) Turner's syndrome

(b) Klinefelter's syndrome



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3. Differentiate between the following:

(a) Dominance and Recessive genes

(b) Homozygous and Heterozygous

(c) Monohybrid and Dihybrid.



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4. Explain the following terms with examples:

(a) Co-dominance (b) Incomplete dominance.



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5. What is DNA polymorphism? Mention its significance.



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6. Write any four characteristics of Dewa's syndrome.



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7. Mention the possible blood groups of the progeny whose mother is heterozygous for Group A and father is heterozygous for Group B.



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8. List the antigens and antibodies of 'A' blood group and 'o' blood group?



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9. Write any four characters of Turner's syndrome?



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10. Write about chromosomal complement, cause and symptoms of Down's syndrome.



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11. Differentiate between incomplete dominance and co-dominance.



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12. Define linkage. Who discovered linkage in *Drosophila*?



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13. Define Co-dominance? Give an example.



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14. Define the terms autosomes and alsonies



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Three Marks Questions And Answers

1. What is incomplete dominance? Describe with one example.



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2. Define the disorder of phenylketonuria



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



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4. Two heterozygous parents are crossed. If the two loci are linked what would be the distribution of phenotypic features in F₂ generation for a dihybrid cross?



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5. How is the sex determined in human beings?



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6. A child has blood group O. If the father has blood group A and mother blood group B, work out the genotypes of the parents and the possible genotypes of the other offsprings.



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7. By using Punnett square, schematically represent the hybrid cross experiment conducted by Mendel using seed color and seed shape of pea as characters.



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Five Mark Questions And Answers

1. . Explain the Law of Dominance using a monohybrid cross.



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2. Using a Punnett Square, workout the distribution of phenotypic features in the first

filial generation after a cross between a homozygous female and a heterozygous male for a single locus.



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3. When a cross is made between a tall plant with yellow seeds (T_Yy) and another fall plant with green seeds (Tt_yy). what proportions of phenotype in the offspring could be expected to be (a) tall and green (b) dwarf and green..



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4. Write about chromosomal complement, cause and symptoms of Down's syndrome.



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5. Explain Mendel's dihybrid cross.



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6. Explain sickle cell Anaemia.





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7. What are chromosomal disorders Describe the following chromosomal disorders in human beings a) Klinefelter's syndrome b) Turner's syndrome.



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