BIOLOGY

BOOKS - CHETANA PUBLICATION

INHERITANCE AND VARIATION

Example

1. What is heredity?

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2. What do you understand by heredity?

3. Define heredity

4. Define inheritance.

5. Define variations.

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6. Give a brief biographical sketch of Gregor Mendel.

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7. Which technique was used by Mendel to explain the mechanism of inheritance?

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8. Which technique was used by Mendel to explain the mechanism of inheritance?

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9. Who gave the first scientific explanation for inheritance?

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10. Which plant was used by Mendel for his experiments?

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11. Enlist seven traits of pea plant selected/studied by Mendel.

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12. What are the reasons for Mendel's success?

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13. "Mendel published his work in 1865 but was recognized only in 1900". Explain.

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14. Name the scientists who rediscovered Mendel's work.

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15. Write a short note on factors as understood by Mendel.

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16. Why did Mendel select pea plant for his experiments?

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17. Give the botanical name for garden pea.

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18. What were the total number of varieties of garden pea that Mendel had to study to start his experiments?

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19. A garden pea plant produced round green seeds. Another pea plant produced wrinkled yellow seeds. Indentify the dominant traits.

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20. A single pea plant in the backyard produces pods with viable seeds but the papaya tree does not. Give reason.

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21. A geneticist interested in studying variations and patterns of inheritance in living beings chooses organisms with a short life span for his experiments. Explain.

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22. What are the general criteria for selecting organisms to perform crosses to study the inheritance of a few traits?

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23. A garden pea plant produces white axial flowers. Another pea plant produces violet terminal flowers. Identify the dominant traits.

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24. Is there similarity between parents and oospring?

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25. A garden pea plant produces inflated yellow pods. Another pea plant produces constricted green pods. Indetify the dominant traits.

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26. How are hybrid seeds produced?

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27. Why are farmers and gardeners advised to buy new F_1 hybrid seeds every year ?

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28. How are alleles of a gene different from each other? Mention their importance.

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29. What is the genetic basis of wrinkled phenotype of pea seed?

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30. Distinguish between: Homozygous and Heterozygous

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31. Distinguish between: Dominant Character and Recessice Character

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32. Distinguish between: Monohybrid Cross and Dihybrid Cross

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33. Distinguish between: Phentypic Ratio and Genotypic Ratio

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34. Distinguish between: Phenotype and Genotype

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35. Distinguish between: F_1 Generation and F_2 Generation

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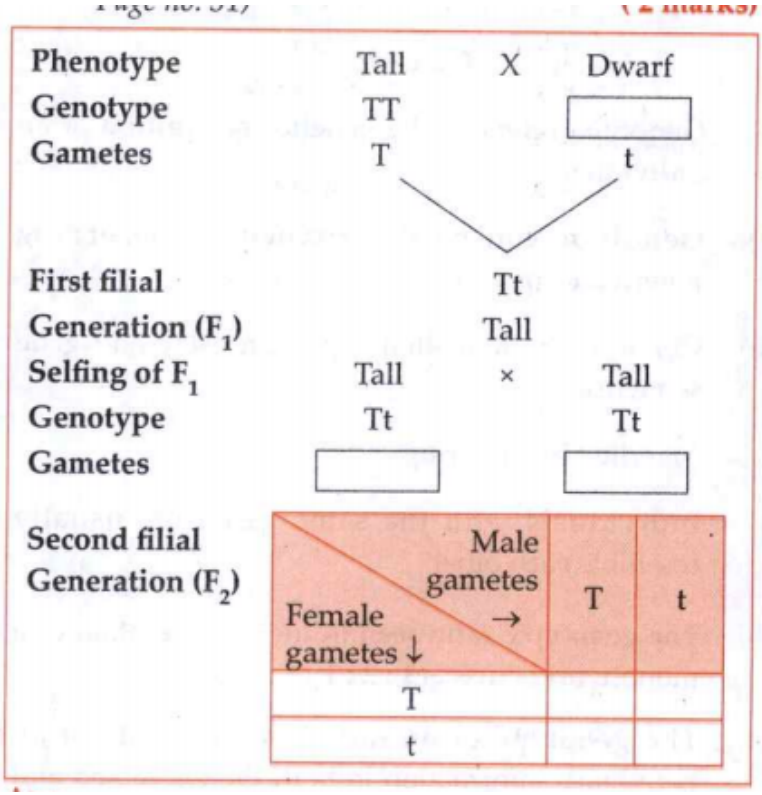
36. Complete the following chart:



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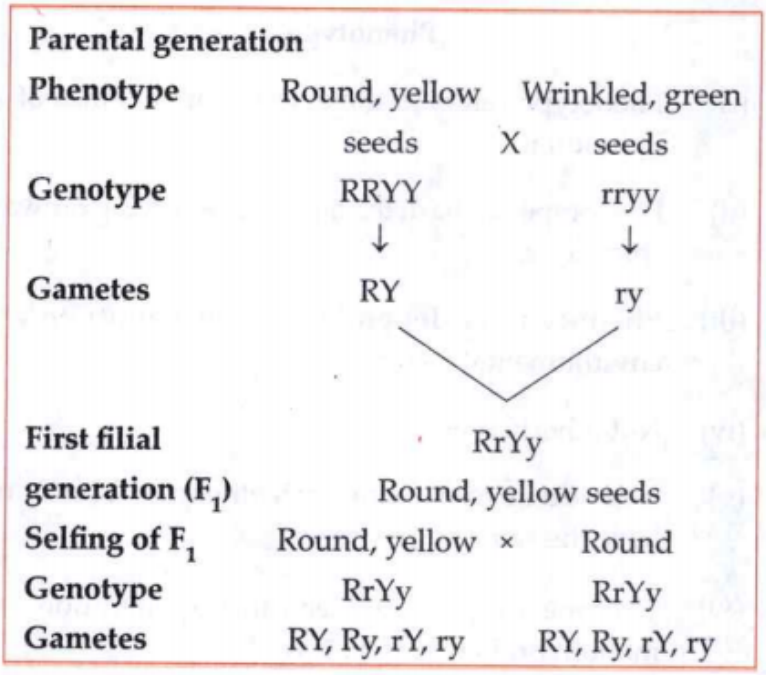
37. Complete the following chart:



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38. There are 16 possible individual in F_2 generation. Try and find out the phenotypes as well as the genotypic and phenotypic ratios.

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39. What is a monohybrid cross? Explain with suitable example and checker board method.

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40. What is a dihybrid cross? Explain with the help of a suitable example and checker board method.

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41. State and explain the Law of Dominance.

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42. State and explain the law of segregation.

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43. State and explain the Law of Independent Assortment.

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44. When a homozygous pea plant with green pods is crossed with a homozygous pea plant with yellow pods, all the offspring showed green coloured pods. Why?

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45. Why did mendel self-pollinate tall F_1 plants to get the F_2 generation and crossed a pure breeding tall plant with a pure breeding dwarf plant to obtain F_1 generation?

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46. Explain with a suitable example Independent Assortment.

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47. A pure tall plant with red flowers is crossed with a pure dwarf plant with white flowers. What will the dihybrid ratio be when the genes interact with each other?

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48. State and explain the 'Law of Independent Assortment' with a suitable example.

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49. Explain the Law of Dominace using a monohybrid cross.

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50. Conduct a cross between a homozygous pea plant for purple axial flowers and a homozygous pea plant for white terminal flowers: Find out the types of progeny in F_2 and the proportion in which they occur.

Watch Video Solution

51. Conduct a cross between a homozygous pea plant for purple axial flowers and a homozygous pea plant for white terminal flowers: Find out the types of progeny in F_2 and the proportion in which they occur.

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52. A cross between a homozygous pea plant with a dominant character and a homozygous

pea plant with a recessive character showed F_1 hybrids expressing the dominant character only. Which law of Mendel's applicable to the above statement?

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53. State and explain Mendel's second law of inheritance.

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54. State and explain the law of purity of gemetes.

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55. A homozygous tall pea plant with yellow seeds is crossed with a homozygous dwarf plant with green seeds: What would be the phenotype and genotype of F_1 ?

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56. A homozygous tall pea plant with yellow seeds is crossed with a homozygous dwarf plant with green seeds: Give the phenotypic and genotypic ration of F_2.

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57. A homozygous tall pea plant with yellow seeds is crossed with a homozygous dwarf plant with green seeds: What would be the phenotype and genotype of F_1 ?

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58. A homozygous pea plant with green pods was crossed with a homozygous pea plant with yellow pods. F_1 produced 883 plants with green pods and 220 plants with yellow pods. State the generalization proposed by Mendel on the basis of the above statement.

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59. The law of segregation is also called the law of purity of gametes. Justify .

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60. The Law of Indepent Assortment is not universally applicable. ' Comment.

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61. Law of Dominance is not universally applicable.' Comment.

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62. Law of segregation is universally applicable.' Comment.

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63. In a cross between two tall pea plants some of the offspring produced were dwarf. Use the checker board to determine how occurs.

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64. A heterozyous tall plant on selfing produces three types of progeny. Explain.

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65. Study the Punnett's square given below and answer the following questions: Are wny of the oospring homozygous recessive? Which one is so? (if your answer is yess)

♀G ↓ ♂G→	RI	Ri	rI	ri
Ri	RRIi	RRii	RrIi	Rriis
Ri	RrIi	Rrii	rrIi	rrii

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66. Study the Punnett's square given below and answer the following questions: Which

Give the phentypic ratio of the cross.

♀G ↓ \ ♂G→	RI	Ri	rI	ri
Ri	RRIi	RRii	RrIi	Rriis
Ri	RrIi	Rrii	rrIi	rrii

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67. Would Mendel's Law of Inheritance be different if the characters he chose were located on the same chromosome?

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68. Find out the principle involved in heredity of sheep coat colour.

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69. Define back cross.

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70. Define test cross.

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71. Define test cross. Explain its significance.

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72. Define and explain a back cross. Add a note on its significance .

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73. During a monohybrid cross involving a tall pea plant with a dwarf pea plant the offspring population were tall and dwarf in equal ratio. Work out a cross to determine this possibility.

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74. A cross is performed to know whether the given plant is homozygous dominant or heterozygous. Name the cross and give its monohybrid cross ratio.

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75. Name the type of cross that would help to find the genotype of a pea plant bearing violet flowers.

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76. A scientist wants his research student to find the genotype of the pea plant bearing purple flowers in the lab. Name and explain the cross that will make it possible.

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77. Test cross is a back cross but back cross is not necessarily a test cross.

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78. Find the ratio of a dihybrid test cross by using Punnett's square.

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79. Differentiate between a test cross and a back cross.

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80. What is Neo-Mendelism?

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81. With the help of example describe the two types of gene interactions.

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82. Distinguish between Intragenic ad Intergenic interactions.

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83. Explain Incomplete Dominance with the help of a suitable example.

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84. A plant bearing yellow flowers was crossed with a plant bearing red flowers. The F_1 progeny showed orange flowers. What is the inheritance pattern followed ?

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85. Name one flower that shows incomplete dominance during the inheritance of its flower colour.

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86. The phenotype and genotypic ratios in F_2 generation are idetical in a certain kind of inheritance. Name the organism in which it occurs and the interaction ivolved.

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87. In snapdragon, a cross between true breeding red flowers (RR) and true breeding white flowers (rr) showed offspring with pink flowers: The appearnce of pink flowers is not known as blending. Why ?

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88. In snapdragon, a cross between true breeding red flowers (RR) and true breeding white flowers (rr) showed offspring with pink flowers: Name the kind of interaction seen.

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89. Explain Co-dominance with the help of a suitable example.

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90. Explain co-dominance with human blood groups.

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91. In Co-dominance and incomplete dominance genotypic and phenotypic ratios are identical. Explain how they diffe in their phenoypic nature in F_1 hybrids.

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92. Compare and contrast Complete Dominance, Incomplete Dominance & Co-Dominance.

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93. Distiguish between incomplete dominance and co-dominance.

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94. Explain multiple alleles with the help of a suitable example.

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95. Explain multiple allelism with the example ofo ABO blood group system in human.

Watch Video Solution

96. Find out the inheritance pattern in blood groups of human beings.

Watch Video Solution

97. Why does an individual have only two alleles even if a character shows multiple allelism?

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98. How is it possible for a child to have blood group O if the parents have blood group A and B?

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99. How does the gene I control ABO blood group in humans?

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100. Why is human ABO blood group considered a good group iin humans?

Watch Video Solution

101. Why is human ABO blood group considered a good considered a good example of multiple alleles?

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102. Work out a cross upto F1 generation between a mother with blood group A (homozygous) and a father with blood group B (Homozygous). Explain the patten of inheritance exhibited.

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103. A woman with blood group O marries a man with blood group AB. Show the possible

blood groups of the progeny. List the alleles involved in this inheritance.

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104. A man with blood group A marries a woman with blood group B. They have a son with blood group AB and a daughter with blood group O. Work out a cross and show the possibility of such an inheritance. As the son has blood group AB and the daughter has

blood group O the possible genotype of the father is IA i and of the mother is IB i.

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105. Explain Pleiotropy with the help of a suitable example.

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106. With the help of a graphical representation explain why two carriers of the

sickle cell trait are counselled not to marry?

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107. Why is the final ratio in pleiotropy 2 : 1? Give reason.

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108. What is a lethal gene?

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109. Write a note on Pleiotropy.

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110. A person with sickle cell anemia is

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111. What is qualitative and quantitative inheritance?

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112. Find out the traits of quantitative inheritance in humans.

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113. Study the complementary and supplementary interactions (digenic interactions) both in plants and animals.

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114. Explain the chromosomal theory of inheritance.

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115. Who proposed the chromosomal theory of inheritance ?

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116. What are chromosomes? OR What is chromosome?

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117. Write short note on chromosome size.

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118. In which form are chromosomes visible during cell division?

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119. What is the chemical composition of chromosomes?

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120. What is the vital role of chromosomes?

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121. What are the roles of chromosomes in living organisms?

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122. Write a short note on chromosomes

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123. Enlist the functions of chloroplast.

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124. Define ploidy.

125. What is ploidy?

126. Define euploidy.

127. What is cell?

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128. Enlist the different types of euploids.

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129. What do you understand by polyploidy?

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130. What is aneuploidy?

Watch Video Solution

131. Differentiate between aneuploidy and polyploidy.

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132. Sketch a flow chart to show ploidy and its types.

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133. Explain the types of aneuploidy.

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134. With the help of a neat labelled diagram describe the structure of a chromosome.

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135. Sketch and label X and Y chromosome.

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136. How many chromosomes are present in human somatic and reproductive cell?

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137. What are linked genes?

 Watch Video Solution

138. What are linkages?

 Watch Video Solution

139. What are linkage groups?

 Watch Video Solution

140. Write a note on thalamus.

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141. What is linkage? How many linkage groups do occur in human beings?

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142. Which are the different types of linkages?

Watch Video Solution

143. Distinguish betwen complete and incomplete linkage.

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144. A diploid organism is heterozygous four loci. How many types of gametes can be produced? Explain.

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145. How do genes and chromosomes share similarities from the point of view of genetic studies?

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146. How many linkage groups are seen in Drosophila melanogaster and garden pea?

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147. How many linkage groups are in human beings and maize?

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148. What is sex linked inheritance?

Watch Video Solution

149. What are sex linkages?

Watch Video Solution

150. Describe the types of sex linkages.

Watch Video Solution

151. What is incompletely sex linkage?

Watch Video Solution

152. What is completely sex linkage ?

Watch Video Solution

153. What is incompletely sex linkage?

Watch Video Solution

154. Give example of complete sex linkages.

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155. Give one example of complete sex linkage.

Watch Video Solution

156. Give example of incomplete sex linkages.

Watch Video Solution

157. Does crossing over occur in complete sex linkage? Justify your answer.

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158. Why are incompletely sex linked genes not inherited together?

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159. Distinguish between complete sex linkage and incomplete sex linkage.

Watch Video Solution

160. Write a short note on crossing over.

Watch Video Solution

161. Write a short note on crossing over.

Watch Video Solution

162. In which region of the sex chromosome does crossing over take place?

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163. Name the stage of meiosis in which crossing over occurs.

Watch Video Solution

164. Name the four steps involved in the process of crossing over.

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165. Write a note on Morgan's experiment.

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166. Describe Morgan's experiment.

Watch Video Solution

167. Write a note on Morgan's experiment showing linkage an recombination.

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168. Give the schematic representation of linkage and crossing over as shown by Mendel.

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169. Name the scientist who associated genes with chromosomes.

Watch Video Solution

170. Name the organism used for conducting his (morgon) experiments.

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171. Drosophila melanogaster is suitable organism for genetic studies.

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172. What do you understand by wild type phenotype in Drosophila?

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173. What do you understand by mutant type phenotype in Drosophila?

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174. On which chromosome was the gene for eye colour located in Drosophila?

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175. Name the theory put forth by Morgan.

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176. How was it known that genes are located on chromosomes?

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177. In Drosophila melanogaster the cross between : yellow body, white eyes and the wild type showed a lesser percentage of recombination.

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178. In Drosophila melanogaster the cross between : White eyed, miniature wings and

the wild type showdd a higher percentage of recombination. Give reason.

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179. During studies on the sex linked genes in Drosophila, Morgan found that the phenotypic ratio of the F_2 generation deviated from the expectd 9 : 3 : 3 : 1 ratio. Explain the conclusion he arrived at.

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180. What was Morgan's observation during experiments carried out on Drosophila?

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181. Linkage and crossing over are the alternatives of each other. Justify.

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182. What is autosomal inheritance?

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183. What are autosome linked traits?

Watch Video Solution

184. What are autosomes?

Watch Video Solution

185. Write a short note on autosomal dominant inheritance.

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186. Write a short note on autosomal recessive inheritance.

Watch Video Solution

187. Write a short note on widow's peak.

Watch Video Solution

188. Write a note on PKU.

Watch Video Solution

189. Give one example of autosomal recessive disorder.

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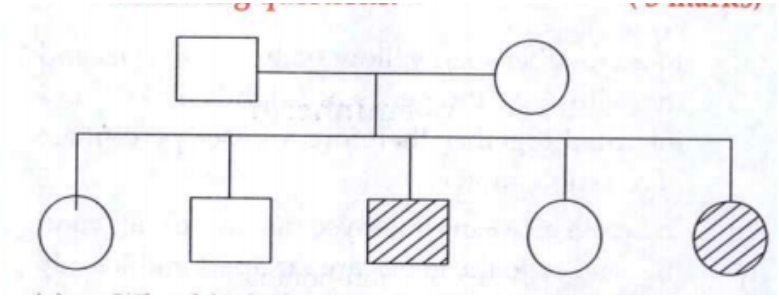
190. The following pedigree shows a particular trait which is absent in the parents but found in the subsequent generation irrespective of the sex. Analysis the pedigree chart and answer the following questions: What kind of disorder does the pedigree show? Justify your answer.



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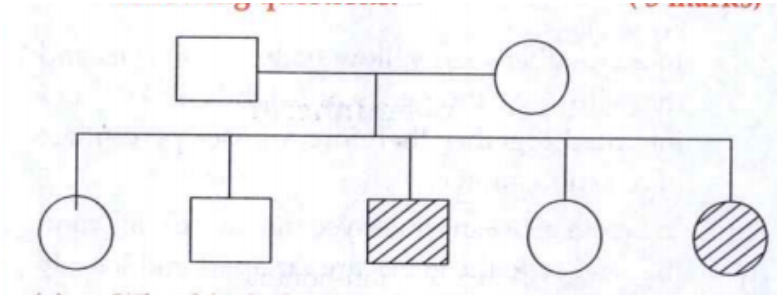
191. The following pedigree shows a particular trait which is absent in the paents but found in the subsequent generation irrespective of the sex. Analyes the pedigree chart and answer the following questions: Give an example of this types of disorder



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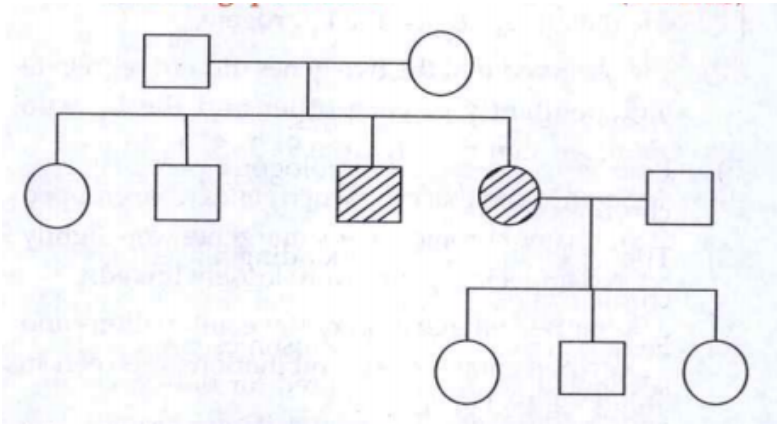
192. Study the given pedigree chart and answer the follwing question: Is the trait dominant or recessive



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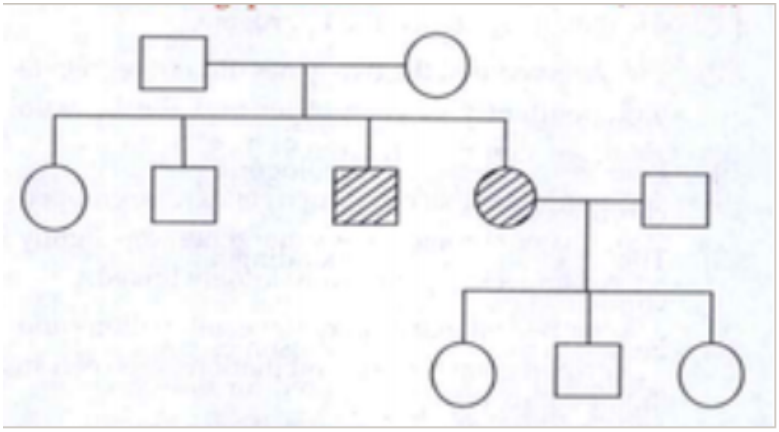
193. Study the given pedigree chart and answer the follwing question: is the trait

autosomal or sex linked? Justify your answer.



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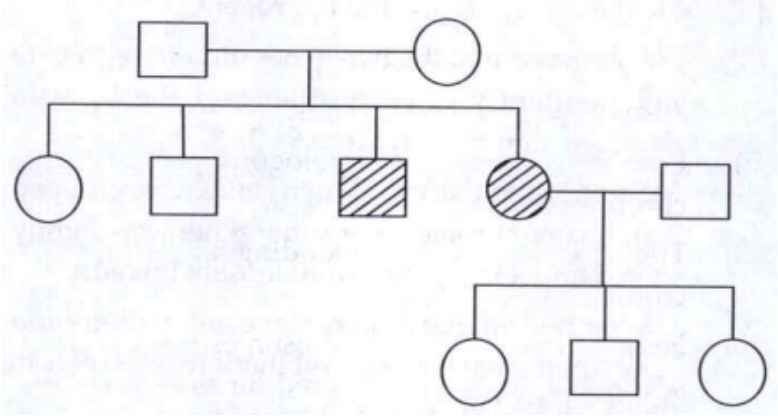
194. Study the given pedigree chart and answer the following question: Give the genotypes of Parents in generation I that is

3rd and 4th child in generation I



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195. Sasha's parents suffer from high blood pressure and are overweight. She is worried about her health. Can she inherit these characteristics from her parents? Explain.

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196. What are sex linked genes?

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197. What are sex linked traits?

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198. What is sex linked inheritance?

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199. Write a note on X-linked genes.

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200. Write a note on Y-linked genes.

Watch Video Solution

201. What are linked genes?

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202. What are holandric traits?

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203. Collect information of Ishihara's Test for colour blindness.

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204. What is colour blindness?

Watch Video Solution

205. Explain the inheritance of colour blindness with suitable charts.

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206. What is Criss-Cross Inheritance

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207. What is Criss-Cross Inheritance

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208. What is haemophilia?

Watch Video Solution

209. Explain the inheritance of heamophilia with suitable charts.

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210. What is criss-cross inheritance? Explain with a suitable example.

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211. A colour blind father has a daughter with normal vision. The daughter marries a man with normal vision. What is the probability

that her children are colour blind. Generate a pedigree chart to arrive at your answer.

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212. Why is colour blindness more prevalent in males than in females? OR Why do more men suffer from heamophilia as compared to women?

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213. The human male never passes on the gene for haemophilia to his son.' Explain. OR If a father and son are both defective in red green colour vision is it likely that the son inherited the trait from his father? Comment.

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214. A girl child has been diagnosed with heamohilia'. Explain this possibility with the help of a cross/crosses.

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215. In the answer for inheritance of X-linked genes, Madhav has shown carrier male. His answer was marked incorrect. Madhav was wondering why his marks were cut. Explain the reason.

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216. Aarya shows normal blood clotting but her mother is heamophilic. Ramesh shows

normal blood clotting but his father is heamophilic. If Ramesh and Aarya were to marry, than find out the possible phenotypes of their offspring.

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217. Why do the son of colour blind's father is not suffering from the same trait?

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218. Define sex determination

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219. Explain the term unisexual and bisexual.

Watch Video Solution

220. Give examples of unisexual organisms

Watch Video Solution

221. Give example of bisexual organsims.

Watch Video Solution

222. Write a short note on X-body.

Watch Video Solution

223. Give the scientific name of squash bug.

Watch Video Solution

224. Name the chromosomal mechanism seen in sex determination in human beings.

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225. Explain sex determination in humans.

Watch Video Solution

226. Explain sex determination in humans.

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227. "Father is responsible for determination of the sex of the child and not the mother."

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228. Woman are often blamed for producing female children. Consequently thy are ill-treated and ostracized. How will you address this issue scientifically?

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229. In our society a woman is often blamed for not bearing a male child. Do you agree? Justify.

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230. Explain sex determination in birds.

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231. Explain sex determination in birds.

Watch Video Solution

232. Explain sex determination in honey bees.

Watch Video Solution

233. Explain sex determination in honey bees.

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234. What is parthenogenesis? Explain the haplo-diploid method of sex determination in honey bee.

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235. How many chromosomes do the drones of honeybee possess? Name the type of cell division involved in sperm production amongst male bees.

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236. " A male honeybee has 16 chromosomes whereas the female bee has 32" Give reason.

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237. What do we know by parthenogenesis?

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238. Write a not on sex determination in Bonellia viridis.

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239. Identify the sex of the organisms as male or female on the basis of their sex chromosomes: ZW in birds

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240. Identify the sex of the organisms as male or female on the basis of their sex chromosomes: XX in humans

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241. Identify the sex of the organisms as male or female on the basis of their sex chromosomes: ZW in birds

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242. Identify the sex of the organisms as male or female on the basis of their sex chromosomes : XY in Drosophila

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243. What are genetic disorders?

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244. Write a short note on types of genetic disorders.

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245. How does a Mendeliam disorder differ from a chromosomal disorder. Give an example of each. Give xamples of Mendelian and chromosomal disorders.

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246. Write a note on thalassemia

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247. A child suffering from thalassemia is born to a normal couple but the mother is being blamed by the family for delivering a sick baby.

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248. Write a note on thalassemia

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249. Why are thalassemia and heamophilia categorized as Mendelian disorders?

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250. Give an account of Down's syndrome.

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251. During a medical investigation an infant was found to possess an extra chromosome 21 . Describe the symptoms the child is likely to develop later in life. Why in females exceeding 40-45 years of age are children with Down's syndrome more likely to be born.

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252. Give an account of Tuner's syndrome.

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253. Which chromosomes are ivolved in and how many chromosomes are typically present for the following conditions. X monosomy

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254. Which chromosomes are involved in and how many chromosomes are typically present for the following conditions. XXY males

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255. Which chromosomes are involved in and how many chromosomes are typically present for the following conditions : Trisomy 21

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256. What kind of abnormality would be seen in an individual if it was formed by an XX egg and a Y carrying sperm?

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257. Which are the chromosomal disorders?

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258. Give an example of chromosomal disorder caused due to non-disjunction of autosomes.

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259. Name the phenomenon that occurs when homologous chromosomes do not separate

during meiosis. Non-disjunction.

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260. Differentiate between Turner's syndrome and Klinefelter's syndrome.

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261. Define non-disjunction.

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262. Match the Column 'I' with Column 'II'

Column 'I'		Column 'II'	
(1)	21 trisomy	(a)	Turner's syndrome
(2)	X-monosomy	(b)	Klinefelter's syndrome
(3)	Holandric traits	(c)	Down's syndrome
(4)	Feminized male	(d)	Hypertrichosis

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Exercise

1. Phenotypic ratio of incomplete dominance in Mirabilis jalapa.

A. $2:1:1$

B. $1:2:1$

C. $3:1$

D. $2:2$

Answer:

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2. In dihybrid cross, F_2 generation offsprings show four different phenotypes whil the genotypes are.....

A. six

B. nine

C. eight

D. sixteen

Answer:

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3. A cross between an individual with unkonwn genotype for a trait with recessive plant for that trait is .....

A. back cross

B. reciprocal cross

C. monohybrid cross

D. test cross

Answer:

4. When phenotypic and genotypic ratios are the same, then it is an example of .....

A. incomplete dominance

B. complete dominance

C. Multiple alleles

D. cytoplasmic inheritance

Answer:

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5. If the centromere is situated near the end of the chromosome, the chromosome is called .....

A. Metacentric

B. Acrocentric

C. Sub-metacentric

D. Telocentric

Answer:

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6. Chromosomal theory of inheritance was proposed by .....

A. Sutton and Boveri

B. Watson and Crick

C. Miller and Urey

D. Oparin and Halden

Answer:

7. If the genes are located in a chromosome as p-q-r-s-t, which of the following gene pairs will

have least probability of being inherited together?

A. p and q

B. r and s

C. s and t

D. p and s

Answer:

8. Find the mis match pair :

A. Down's syndrome = 44+XY

B. Turner's syndrome = 44 + XO

C. Klinefelter syndrome = 44 + XXY

D. Super female = 44 + XXX

Answer:

9. A colourblind man maries a woman, who is homozygous for normal colour vision, the probability of their son being colourblind is -

A. 0

B. 0.25

C. 0.5

D. 1

Answer:

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10. Mendel performed experiment on .....

A. pigeon pea

B. cow pea

C. garden pea

D. chick pea

Answer:

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11. Which of the follwoing trait is dominant in Pisum sativum?

A. White flowers

B. Green seeds

C. Yellow pods

D. Inflated pods

Answer:

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12. A cross between an individual with unkonwn genotype for a trait with recessive plant for that trait is .....

A. Back cross

B. reciprocal cross

C. Test cross

D. Monohybrid cross

Answer:

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13. In dihybrid cross, F_2 generation offsprings show four different phenotypes whil the genotypes are.....

A. six

B. nine

C. eight

D. sixteen

Answer:

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14. Emasculation is.....

A. removing pollen grains

B. removing stamens before anthesis

C. removing stamens after anthesis

D. removing stamens from male parents

Answer:

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15. When phenotypic and genotypic ratios are the same, then it is an example of .....

A. incomplete dominance

B. Cytoplasmic inheritance

C. Quantitative inheritance

D. Incomplete dominance and co-dominance

Answer:

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16. A pea with yellow and round seeds is crossed with another pea plant with green and wrinkled seeds produce 51 yellow round seeds and 49 yellow wrinkled seeds, the genotype of plant with yellow round seeds must be.....

A. YYRr

B. YyRr

C. YyRR

D. YYRR

Answer:

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17. When a single gene produces two effects and one of it is lethal then the ratio is .....

A. $2:1$

B. $1:1$

C. $1:2:1$

D. $1:1:1:1$

Answer:

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18. When two genes control a single character and have cumulative effect the raion is.....

A. $1:1:1:1$

B. $1:4:6:4:1$

C. $1:2:1$

D. $1:6:15:20:15:6:1$

Answer:

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19. Genes located on the same locus but show different expression,

A. Polygenes

B. Multiple alleles

C. Co-dominants

D. Pleiotropic genes

Answer:

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20. If the centromere is situated near the end of the chromosome, the chromosome is called .....

A. Metancentric

B. Acrocentric

C. Telocentric

D. Sub-metacentric

Answer:

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21. ..... chromosome appears 'V' shaped during anaphase.

A. Metacentric

B. Acrocentric

C. Telocentric

D. Sub-metacentric

Answer:

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22. Sex- linked genes are present on .....

A. Homologous region of sex chomosomes

B. Non-homologous region of autosomes

C. Homologous region of autosomes

D. Non-homologous region of X chromosome

Answer:

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23. Sex determination in human being is .....

A. XY-XX type

B. XX-XO type

C. XX-XY type

D. XO-XX type

Answer:

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24. Colour blindness is a .....

A. deficiency disease

B. X-linked disease

C. Y-linked disease

D. XY-linked disease

Answer:

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25. The sister chromatids that help together at .....

A. centrioles

B. chromomere

C. chromonemata

D. centromere

Answer:

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26. Which of the following is not X-linked disorder?

A. Heamophilia

B. Hypertrichosis

C. Night blindness Myopia

D. Myopia

Answer:

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27. Which of the follwoing is also called bleeder's disease ?

A. Anaemia

B. Thrombocytopenia

C. Polycythemia

D. Haemophilia

Answer:

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28. XXY Chromosomal complement is found in .....

A. Down's syndrome

B. Turner's syndrome

C. Klinefelter syndrome

D. Edward's syndrome

Answer:

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29. The person with Tuner's syndrome has .....

A. 45 autosome and X sex chromosome

B. 44 autosomes and XYY sex chromosome

C. 45 autosomes and X sex chromosome

D. 44 autosomes and XO sex chromosomes

Answer:

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30. Webbed neck is characteristic of .....

A. XXY sex chromosomes

B. XY sex chromosomes

C. XXY sex chromosomes

D. XO sex chromosomes

Answer:

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31. If genetic disease is transferred from a phenotypically normal carrier female to some of the male progeny the disease is.....

A. autosomal dominant

B. autosomal recessive

C. sex-linked dominant

D. sex-linked recessive

Answer:

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32. How many gametes will be produced by AA Bb cc genotype?

A. 2

B. 4

C. 6

D. 9

Answer:

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33. Which of the following is most appropriate for thalassemia?

A. decrease of either beta(B) or alpha (α) globin chain of HbA.

B. decrease of either alpha cells (α) of pancreas

C. decrease of WBC count

D. decrease of blood platelets.

Answer:

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34. Genotype of blood group 'AB' in humans is.....

A. $I^A I^B$

B. $I^B i$

C. $I^A I^A$

D. ii

Answer:

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35. Myopia is an example of .....

A. complete sex linkage

B. incomplete sex linkage

C. recombination

D. crossing over

Answer:

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36. The genotypic ratio 1 : 2 : 2 : 4 : 1 : 2 : 1 : 2 : 1 is obtained in F_2 generation. What will be the phenotypic ratio?

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37. Define the term 'recessive'

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38. Test cross is a back cross but back cross is not necessarily a test cross.

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39. What is aneuploidy?

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40. What is Down's syndrome also known as?

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41. Give the graphical representation of cross which verifies the genotype of F_1 hybrid.

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42. Give any two contrasting trais studied by Mendel.

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43. Write a note on types of chromosomes.

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44. Write a note on PKU.

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45. Sketch a flow chart to show ploidy and its types.

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46. Explain Pleiotropy with the help of a suitable example.

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47. Distinguish between autosomes and allosomes.

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48. A true breeding homozygous pea plant with gren pods and axial flowers as dominant characters is crossed with a recessive homozygous pea plant with yellow pods and terminal flowers. Generate Punnett's square to explain the above.

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49. A true breeding homozygous pea plant with green pods and axial flowers as dominant

characters is crossed with a recessive homozygous pea plant with yellow pods and terminal flowers. Mention the following Phenotype and genotype of F_1

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50. A true breeding homozygous pea plant with green pods and axial flowers as dominant characters is crossed with a recessive homozygous pea plant with yellow pods and

terminal flowers. Mention the following Phenotype ratio of F_2 generation.

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51. Study the following table and fill in the labels markd A, B, C, D, E, F

No.	Syndrome	Cause	Characteristics of affected individuals	Sex Male/Female/Both
(i)	Down's	Trisomy	'A' (i)	'B'
(ii)	'C'	XXY	Overall masculine development	'D'
(iii)	Turner's	45 + XO	'E' (i) (ii)	'F'

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52. Write a note on Morgan's experiment.

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