



BIOLOGY

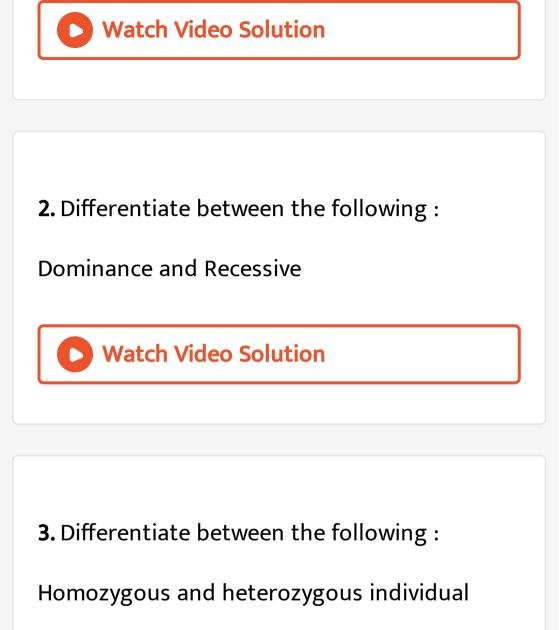
BOOKS - MBD -HARYANA BOARD

PRINCIPAL OF INHERITANCE AND VARIATIONS



1. Mention the advangeages of selecting pea

plant for experiment by Mendel.

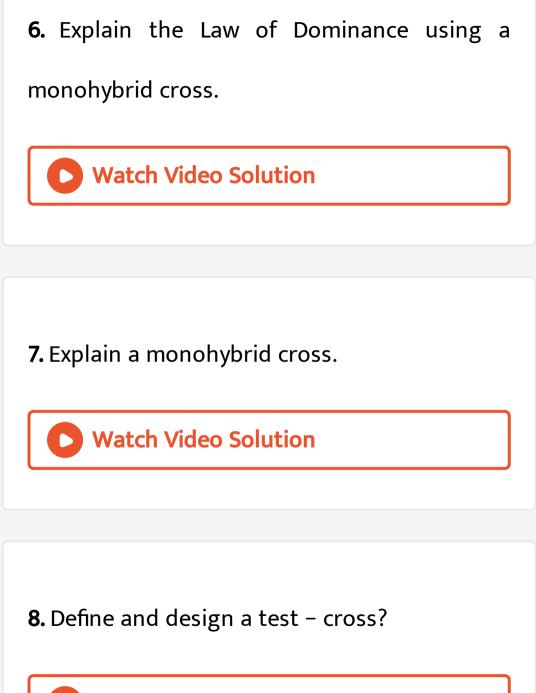


4. Differentiate between the following :

Monohybrid and dihybrid.



5. A diploid organism is heterozygous for 4 loci,how many types of gametes can be produced?



9. Using a Punnett square, work out 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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13. Briefly mention the contribution of T.H.
Morgan in genetics.
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14. What is pedigree analysis?Suggest how such an analysis can be useful?



15. (a) How is sex determined in humans ?

16. 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.

17. Explain the following terms with example:

CO-dominance

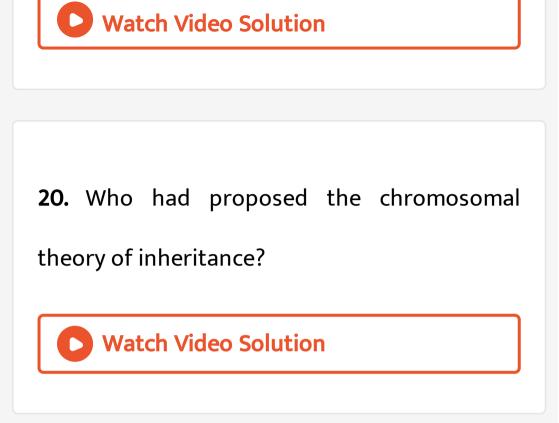
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18. Explain the following terms with example:

Incomplete cominance.

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19. What is point mutation? Give one example.



21. Mention any two autosomal genetic

disorders with their symptoms

22. Name on trait that does not blend.



23. Give one example of genetic trait for each

of the following in humans:

Lethality

24. Give one example of genetic trait for each

of the following in humans:

Multiple allelism.



25. What for symbols AA and Aa stand?



26. Mention the phenomenon of pleiotropy by

giving an example.

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27. Name the plant that shows incomeplete dominance in respect of the colour of its flower.

28. Write the genotype of man with blood group 'A'Watch Video Solution

29. What will be the genetic make up of an organism which suffers from sickle cell anaemia?

30. What do the symbols square and circle in a

pedigree chart indicate?

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31. Why is male Drosophila regarded as

herterogametic?

32. What is name of a cross in which white

eyed female are cross with red eyed males?

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33. Coin one word or two words equivalents for the following:

The individuals having characters of both the

parents.



34. Coin one word or two words equivalents for the following:

the cytological manifestations of crossing durig meiosis.



35. Coin one word or two words equivalents

for the following:

the gametes having genetic constitutions

resembing one or the other parental type.

36. Coin one word or two words equivalents for the following:

The basis of failure of two genes to assort independently.

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37. Coin one word or two words equivalents for the following:

the situation when two dominant linked

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38. Coin one word or two words equivalents

for the following:

The individuals resembling one or the other

parental type through several generations.

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the characters linked to X and Y chromosomes.

41. How many linkage groups are found in man

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42. In which two ways numerical changes occur in the chromosomes?



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44. How are mutations caused?



45. Name the sex chromatin bodies and the

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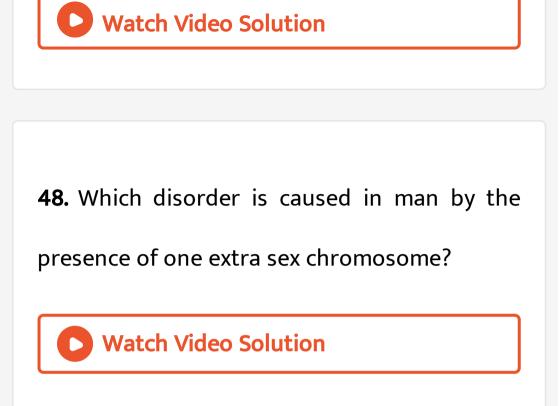


46. List any two mechanisms by which a

variant genotype is produced.



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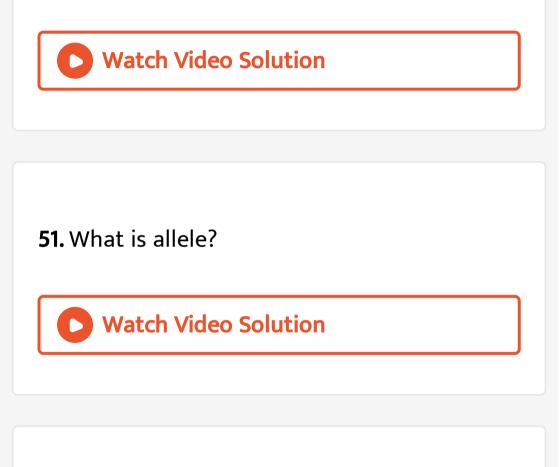
49. What would be the disorder caused due to

presence of extra autosomal chrosome?



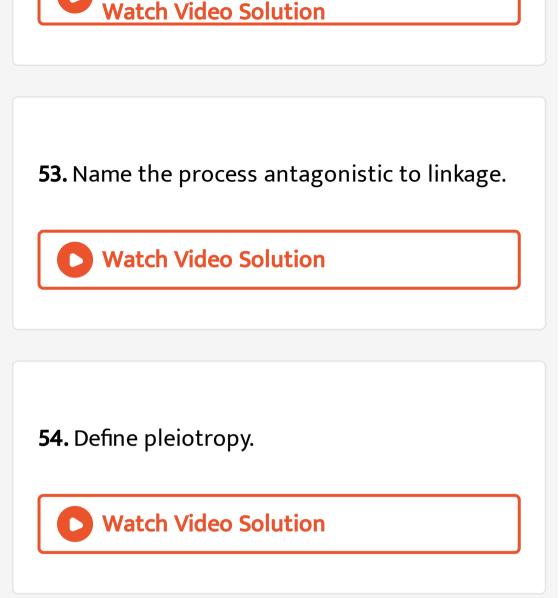
50. What will be the sex of the offspring

developing from 44 A+xx zygote?



52. Who had proposed the chromosomal theory of inheritance?





55. What are the cuases of variations in clones? Are identical twin clones of each other?Watch Video Solution

56. Differentiate between back cross and test

cross.



57. A black-colour cock when bred with white coloured hen produced steel blue coloured offspring and when inbred, black, white and steel -blue coloured progeny were obtained: This result is genetically explained as

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58. A black-colour cock when bred with white coloured hen produced steel blue coloured offspring and when inbred, black, white and

steel -blue coloured progeny were obtained:

What will be the expected ratio of blck,steel-

blue and white progeny?



59. Incomplete dominance and Codominance.

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60. In man four types blood groups A,B,AB and

O are controlled by three alleles of a

gene.What is the mechanism of inheritance of

the blood groups?



61. What will be the blood groups of the children of following matings? $I^A I^B imes I^B I^B$

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 $I^A I^O imes I^A I^B$



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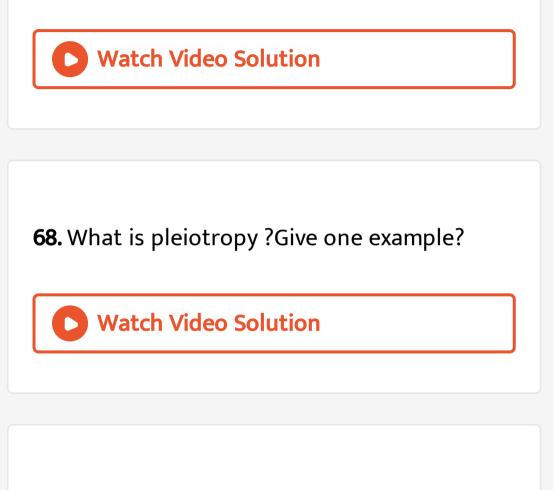
66. Sometimes a gene which carries a major disadvantage in a homozygous condition confers an advangtage in heterozygous condition.Explain with a suitable condition.

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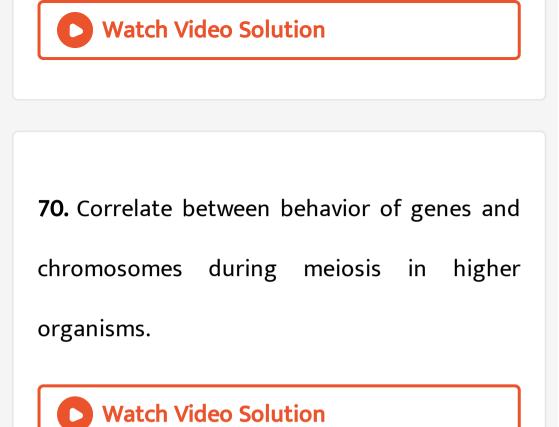
67. With a suitable example, explain pleiotropy. Which of the genes studied by



pleiotropic?



69. Who proposed the chromosome theory of inheritance?State the chromosome theory of inheritance.

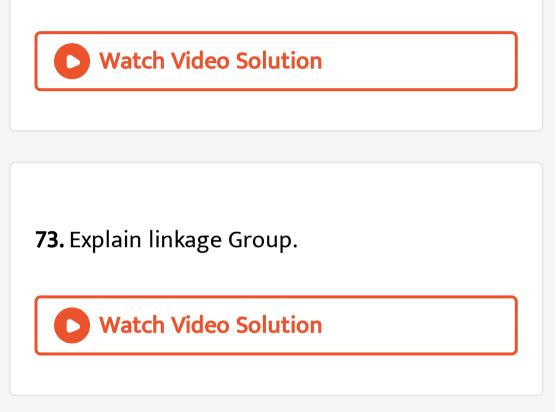


71. List the main points of chromosome theory

of inheritance.



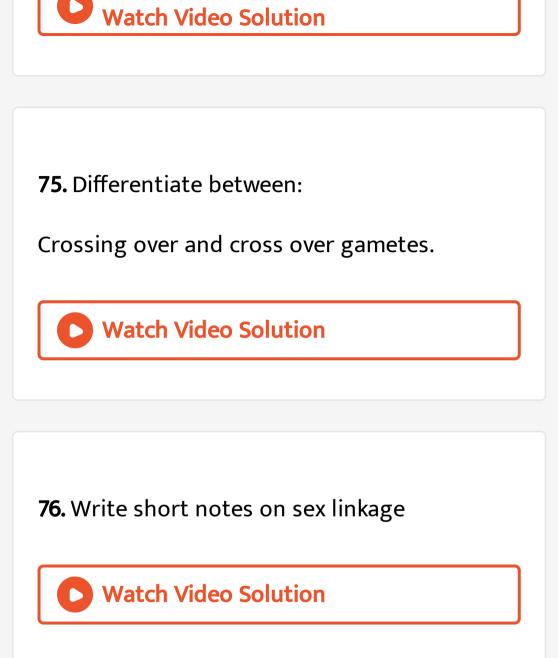
72. What are types of linkage?



74. Differentiate between:

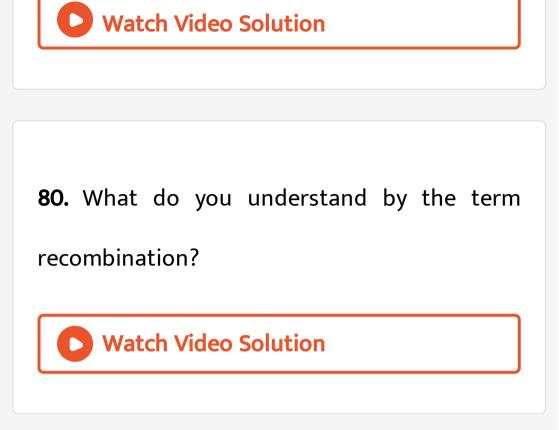
Complete linkage and incomplete linkage.





77. Give example of sex linked inheritance in Drosophila. Watch Video Solution 78. Why is a man unable to pass on a sex linked gene to his son? Watch Video Solution

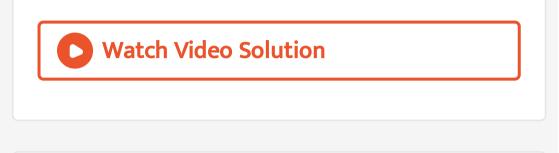
79. Write a note on sex linked genes .



81. Briefly mention the contribution of T.H.

Morgan in genetics.

82. Tabulate the types of mutations.



83. List a few congenital defects in human diagnosed by differential staining of chromosomes.

84. What is the significance of pedigree analysis?Watch Video Solution

85. What is the cross between the progeny of F_1 and the homozygous recessive parent called? How is it useful?

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were true breeding?

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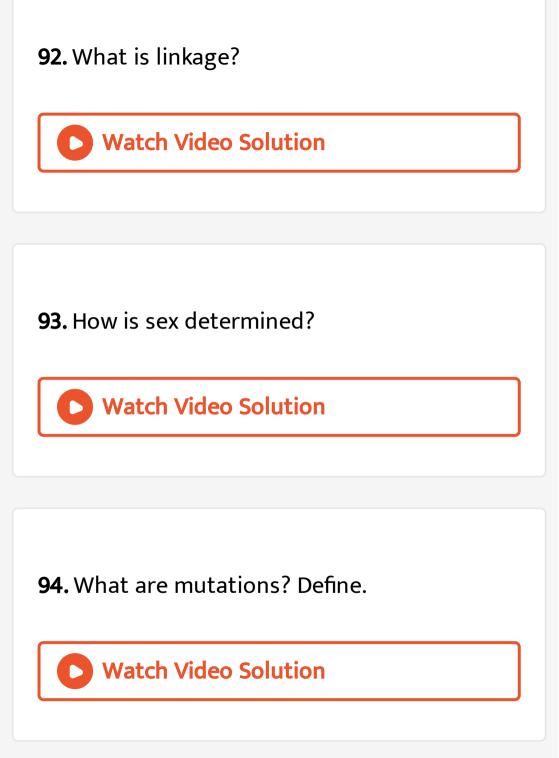
experiment and why?

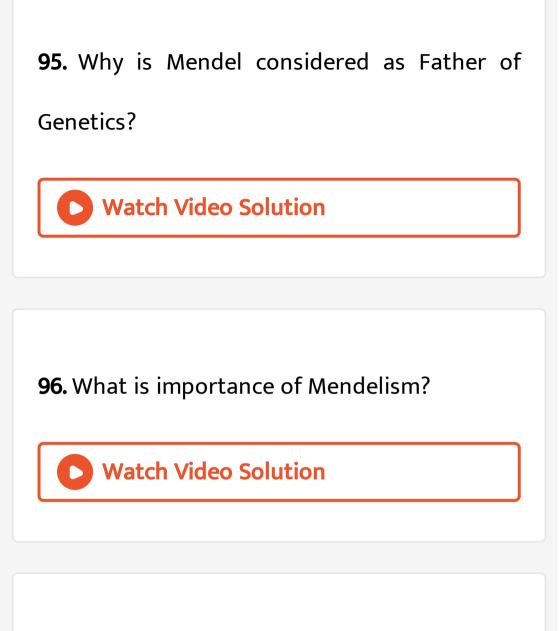
90. Write the various conclusions and hereditary principles drawn by Mendel from a monohybrid cross.



91. What do you mean by incomplete dominance?Cite two examples.







97. A haemophilic carrier female marries a normal man.With the help of Punnett square

,show the type of progeny formed.



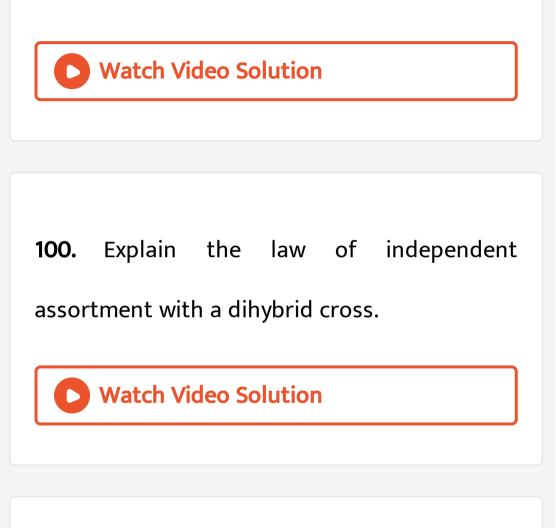
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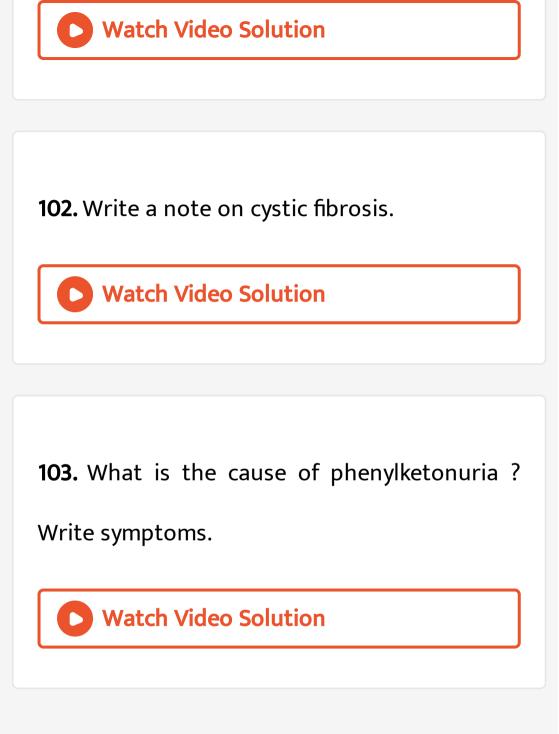
99. A carrier female for colourblindness marries a man with normal vision.With the

help of Punnet square show the types of

progeny formed.



101. Describe quantitative inheritance takin skin colour in man as an example.



104. Write any four differences between somatogenic and blastogenic variations.
Watch Video Solution

105. Mention the advantages of selecting pea

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106. Differentiate:

Dominance and Recessiveness

Watch Video Solution

107. Differentiate between the following :

Homozygous and heterozygous individual

108. Differentiate between the following :

Monohybrid and dihybrid cross

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109. A diploid organism is heterozygous for 4 loci, how many types of gametes can be produced?

110. Explain the Law of Dominance using a monohybrid cross. Watch Video Solution 111. Monohybrid Cross Watch Video Solution

112. Define and design a test – cross?

113. Using a Punnett square, work out 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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114. When a cross is made between tall plant with yellow seeds (TtYy) and tall plant with

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125. Name one trait that does not blend.



126. Give one example of genetic trait for each

of the following in humans:

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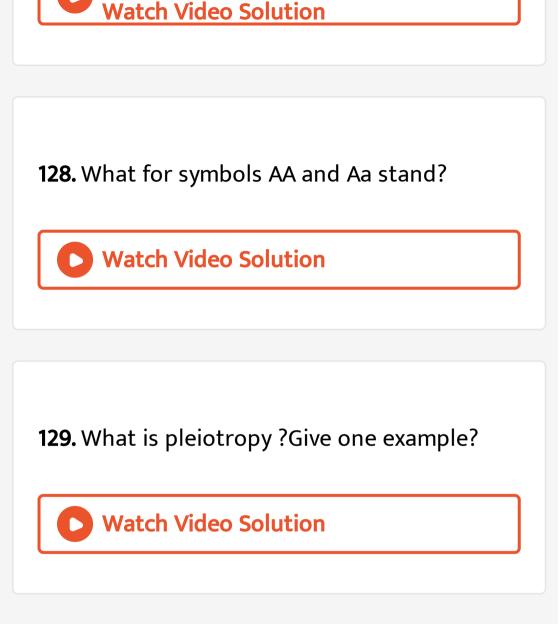
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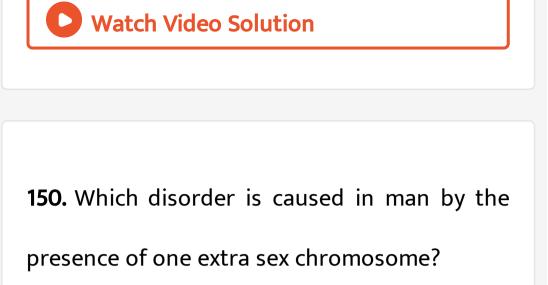


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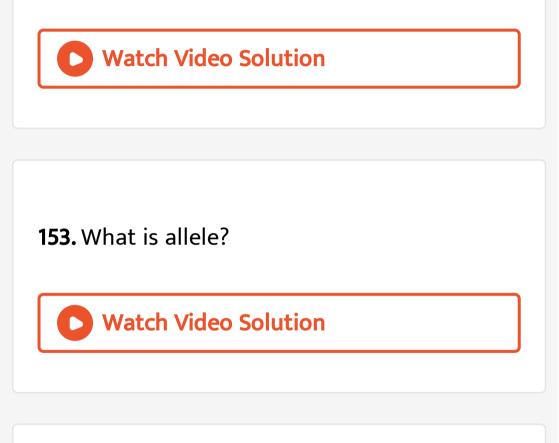
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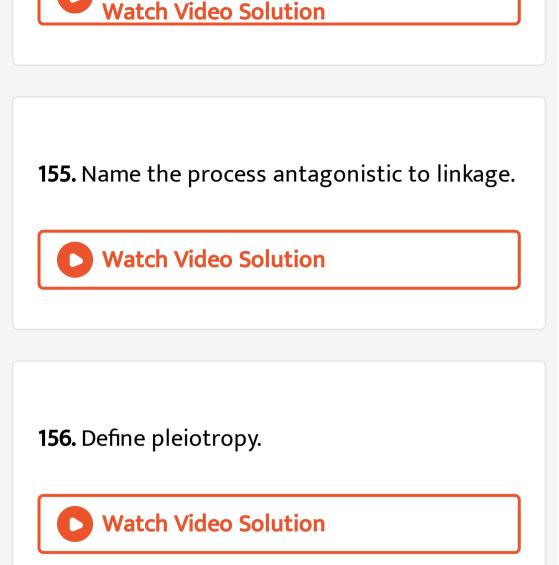
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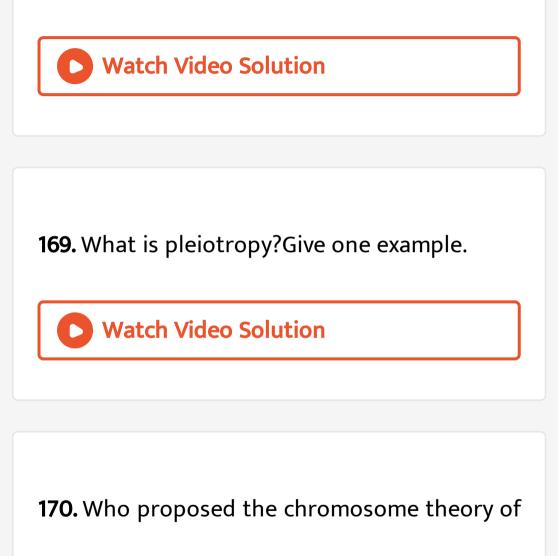
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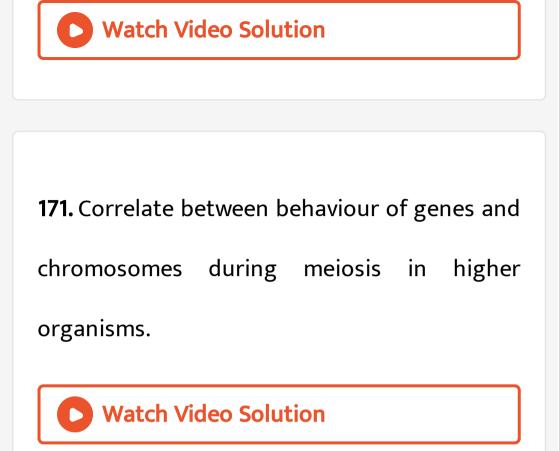


pleitropic?



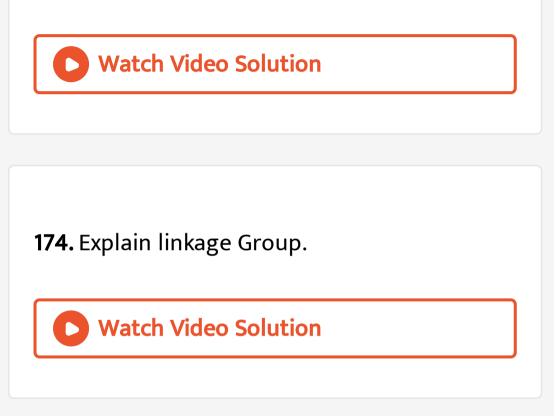
inheritance?State the chromosome theory of

inheritance.



172. List the main points of chromosome theory of inheritance.

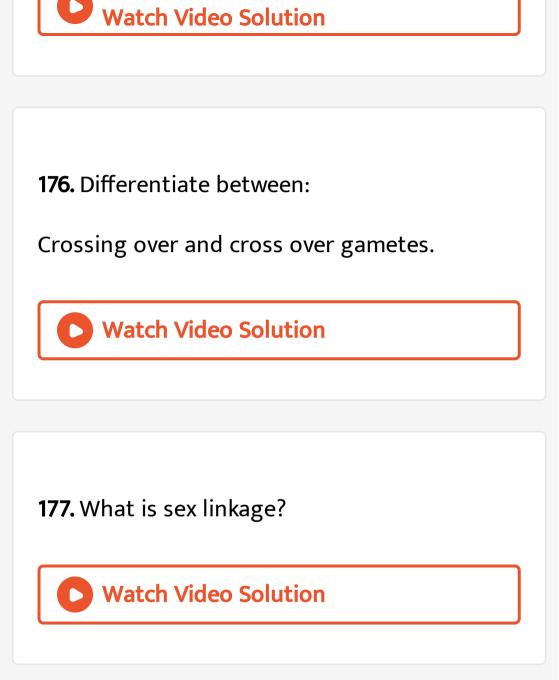




175. Differentiate between:

Complete linkage and incomplete linkage.





178. Give examples of sex linked imheritance in

Drosophila.

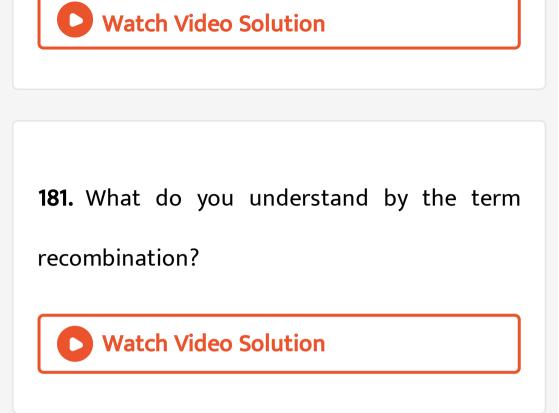
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179. Why is a man unable to pass on a sex

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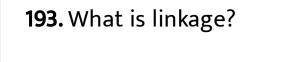
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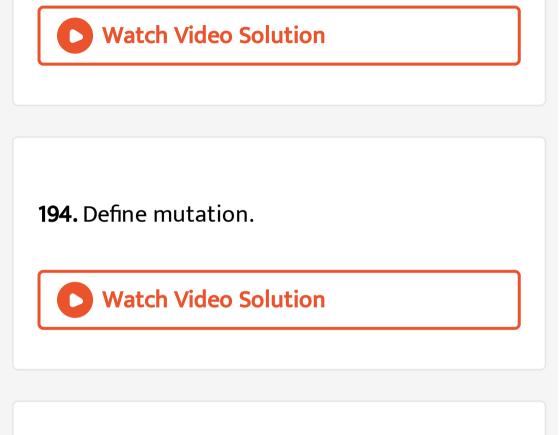
191. Write the various conclusions and hereditary principles drawn by Mendel from a monohybrid cross.



192. What do you mean by incomplete dominance ?Give example.







195. Why is Mendel considered as Father of

Genetics?

196. What is the importance of Mendelism?

Watch Video Solution

197. A haemophilic carrier female marries a normal man. With the help of Punnett square ,show the type of progeny formed.



198. Carrier woman for colourblind married a colourblind man.Show the type of progeny formed with the help of Punnett square.



199. A carrier female for colourblindness marries a man with normal vision.With the help of Punnet square show the types of progeny formed.

200. Explain the law of independent assortment with a dihybrid cross.

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201. Describe quantitative inheritance taking

skin color in man as an example.



Human females are homogametic and males

are..... .



2. Fill in the blanks with suitable words:

Haemophilia is a disorder.



X-chromosome was previously named X-body

by



4. Fill in the blanks with suitable words:

Turner's syndrome is due to of

chromosome

Klinefelter's syndrome is due to of extra

.....chromosome

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6. Fill in the blanks with suitable words:

down's sydrome is due to of

chromosome.

DNA fingerprinting was invented by



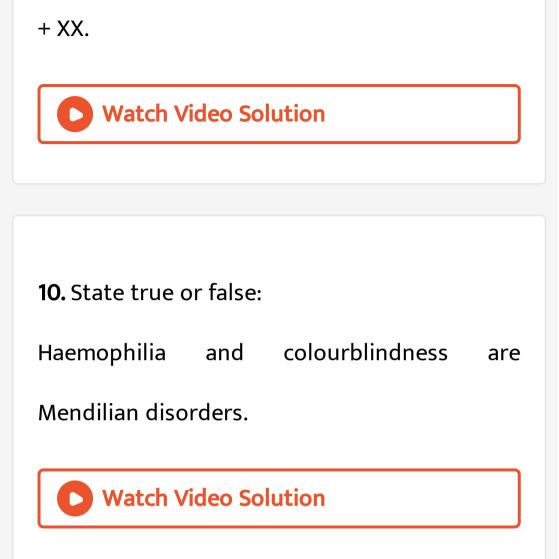
8. State true or false:

Colour blindness is a sex linked disorder

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9. State true or false:

Human males are AA + XY and females are AA



11. State true or false:

Klinefelter syndrome and turner syndrome are



Watch Video Solution

12. State true or false:

In birds female has pairs of dissimilar sex

chromosomes ZW.

Watch Video Solution

13. State true or false:

Human beings normally have 24 pairs of

chromosomes.



14. Coin one word for the following statements:

The ancestral history of an individual

represented by a chart.

15. Coin one word for the following statements:

The occurrence of only one representative of a

chromosome in an otherwise diploid cell.



16. Coin one word for the following statements:

Particular segment of DNA which controls one

character.





17. Coin one word for the following

statements:

Chromosomes other than sex chromosomes.

Watch Video Solution

18. Expand PKU.

19. Genic balance theory was proposed by :

A. Bridges

B. Morgan

C. Boveri

D. Lyon.

Answer:



20. Males are XO and females XX in case of :

- A. Squash bug
- **B.** Fishes
- C. Man
- D. None of these.

Answer:



21. A male child would be born to parents is :

A. Father is healtheir than the mother

B. Mother eats well during pregnancy

C. The gametic composition of the child

includes XY combination of

chromosomes.

D. None of the above

Answer:

22. The gametic composition of child includes

XX combination of chromosomes.

Watch Video Solution

23. What would be the ratio between colour blind and normal individuals in 2nd generation-progeny of colour blind man and normal woman?

A. 3:1

B. 1:3

C.0:4

D. 2:2.

Answer:



24. Philadelphia chromosome is reported in

patients suffering from:

A. Insomia

B. Kidney stone

C. Leukaemia

D. Mental disorders

Answer:



25. Genetic disorder due to trisomy of chromosome 21 in humans is :

A. Down's syndrome

B. Turner's syndrome

C. Klinefelter's syndrome

D. None of these.

Answer:

Watch Video Solution

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Particular segment of DNA which controls one

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A. Bridges

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D. Lyon.





43. Males are XO and females XX in case of :

A. Squash bug

B. Fishes

C. Man

D. None of these.

Answer:



44. If the female is carrier and male is normal, what percentage of female offspring will be haemophilic:

A. 0.25

B. 0.5

C. 0

D. 100%.





45. Sickle cell anaemia is due to :

A. A virus

B. Iron deficiency

C. Haemoglobin deficiency

D. Genetic disorder.

Answer:

46. A male child would be born to parents if

A. Father is healtheir than the mother

B. Mother eats well during pregnancy

C. The gametic composition of the child

includes XY combination of

chromosomes.

D. None of the above

Answer:

47. The gametic composition of child includes

XX combination of chromosomes.

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48. A man heterozygous for sickle cell anaemia

will show in his blood:

A. some normal and some sickle-shaped

cells

B. all the erythrocytes having sickle like

shapes

C. more normal erythrocytes and a few

sickle-shaped cells.

D. None of the above

Answer:

49. What would be the ratio between colour blind and normal individuals in 2nd generation-progeny of colour blind man and normal woman?

A. 3:1

B.1:3

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Answer: