

BIOLOGY

BOOKS - SURA BIOLOGY (TAMIL ENGLISH)

HEREDITY

Textbook Evaluation Choose The Correct Answer

- **1.** According to Mendal ,alletes have the following character
 - A. Pair of gene
 - B. Responsible for character
 - C. Peoduction of gametes
 - D. Recessive factors

Answer: A::B::C



- **2.** 9:3:3:1 ratio is due to____
 - A. Segregation
 - B. Crossing over
 - C. Independent assortment
 - D. Recessiveness

Answer: A::D



- **3.** The region of the chromosome where the spindle fibre get attached during cell division.
 - A. Chromomere
 - B. Centrosome

D. Chromonema
nswer: C
Watch Video Solution
The centromere is found at the centre of the chromsome.
A. Telocentric
B. Metacentric
C. Sub-metacentric
D. Acrocentric
nswer: A::C
Watch Video Solution

C. Centromere

5. Theunits form the backbone of the DNA.
A. 5 carbon sugar
B. Phosphate
C. Nitrogenous bases
D. Sugar phosphate
Answer: A
Watch Video Solution
6. Okazaki fragements are joined together by
6. Okazaki fragements are joined together by A. Helicase
A. Helicase

Answer: A::D
Watch Video Solution
7. The number of chromosomes found in human beings are
A. 22 pairs of autosomes and 1 pair of allosomes
B. 22 autosomes and 1 allosome
C. 46 pairs autosome and 1 pair of allosomes.
D.
Answer:
Watch Video Solution
8. The loss of one more chromosome in a ploidy is called
A. etraploidy

B. Aneuploidy
C. Euploidy
D. Polyploidy
Answer:
Watch Video Solution
Textbook Evaluation Fill In The Blank
1. The pairs of contrasting character (traits) of Mendal are called
Watch Video Solution
2. Physical expression of a gene is called
Watch Video Solution

3. The thin thread like structures found in the nucleus of each cell are
called
Watch Video Solution
4. DNA consists of twochains
Watch Video Solution
5. An inheritable change in the amount or the structure of a
chromosome is called
Watch Video Solution
Textbook Evaluation Identify Whether The Statement Are True Or False
Correct The False Statement

1. A typical Mendelian dihybrid ratio of F_2 generation is 3:1
Watch Video Solution
2. A recessive factor is altered by the presence of a dominant factor.
Watch Video Solution
3. Each gamete has only one allele of a gene.
Watch Video Solution
4. Hybrid is an offspring from a cross between genetically different parent.
Watch Video Solution

5. Some of the chromosomes have an elongated knob-like appendage
known as telomere.
Watch Video Solution
6. New nucleotides are added and new complimentary strand of DNA is
formed with the help of enzyme DNA polymerase.
Watch Video Solution
Water video soldatori
7 Daniela con diversa in the more time and it is a with AE above and a
7. Down's syndrome is the genetic condition with 45 chromosomes.
Watch Video Solution
Textbook Evaluation Match The Following
1.

Textbook Evaluation Answer In A Sentence

1. What is a cross in which inheritance of two pairs of contrasting characters are studied?



2. Name the conditions when both the alleles are identical.



3. A garden pea plant produced axial white flowers. Another of the same species produced terminal violet flowers. Identify the dominant traits.



4. What is the name given to the segments of DNA, which are responsible for the inheritance of a particular character?
Watch Video Solution
5. Name the bond which binds the nucleotides in a DNA
Watch Video Solution
Textbook Evaluation Short Answer Questions
1. Why did Mendel select pea plant for this experiments?

2. What do you understand by the term phenotype and genotype?

Watch Video Solution

Watch Video Solution

3. What are allosomes?
Watch Video Solution
4. What are Okazaki fragments?
Watch Video Solution
5. Why is euploidy considered to be advantageous to both plants and
animals?
Watch Video Solution
6. A pure tall plant (TT)is crossed with pure dwarf plant (tt),What would
be the F_1 and F_2 generations?Explain.
Watch Video Solution

- 7. (i) What are allosomes?
- (ii) Explain the structure of a chromosome.
 - Watch Video Solution

- **8.** Label the parts of the DNA in the diagram given below. Explain the structure briefly.
 - View Text Solution

Textbook Evaluation Long Answer Questions

1. Explain with an example the inheritance of dihybrid cross. How is it different from monohybrid cross?



2. How is the structure of DNA organized? What is the biological significance of DNA?



3. The sex of the new born child is a matter of chance and neither of the parents may be considered responsible for it. What would be the possible fusion of gametes to determine the sex of the child?



Textbook Evaluation High Order Thinking Skills Hots

1. Flowers of the garden pea are bisexual and self-pollinated .Therefore ,it iks difficult to perform hybridization experiment by crossing a particular pistil with the specific pollen grains.How Mendek made it possible in his monohybrid and dihybrid crosses?

2.
$$\geq \neq rationare then cross - bred \rightarrow \prod uce F_(2)$$

$$\geq \
eq \ ration of peap lants. \ (a) W \hat{d} \ other plants of$$
 F_(1)

$$\geq \
eq rationl\infty klike?(b) \hat{Wistheratiooftallplants}
ightarrow dwarfplantns \in$$

$$\geq \
eq ration but reappeared \in {\sf F}$$
 (2)`generation?

 $F(2) \geq \neq ration?@Whichtypeofplantsweremis \sin g \in F(1)$



3. Kavitha gave birth to a female baby.Her family members say that she can give birth to only female babies because of her family history .Is the statement given by her family members true.Justify your answer .



Textbook Evaluation Value Based Question

1. Under which conditions does the law of independent assortment hold good and why?



Additional Questions Answers Choose The Correct Answer

- **1.** V shaped chromosomes are called_____
 - A. Metacentric
 - B. acrocentric
 - C. submetacentricq
 - D. telocentric

Answer: A::C



Watch Video Solution

2. The sex chromosomes in a human cell refer to the
A. 22^{nd} pair
B. 20^{th} pair
C. 23^{rd} pair
D. 21^{st} pair
Answer: A::B::C::D
Watch Video Solution
3. The haploid condition in a human cell refers tochromosomes.
A. 44
B. 23
C. 46
c. 10

Answer: B::C
Watch Video Solution
4. L shape chromosomes are described as
A. acrocentric
B. metacentric
C. submetacentricq
D. telocentric
Answer: A::B::C
Watch Video Solution
5 is not a nitrogenous base
A. Adenine

B. Thymine

C. Leucine

D. Cytosine

Answer: C



Watch Video Solution

6. Choose the correct pair_____

A.
$$A\equiv T$$

 $\operatorname{B.} G \equiv A$

 $\operatorname{C.} A \equiv C$

 $\operatorname{D.} G \equiv C$

Answer: D



Watch Video Solution

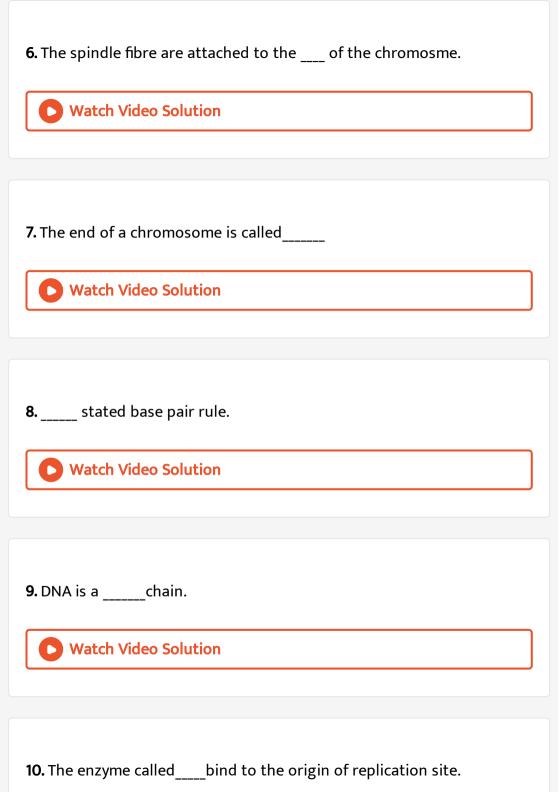
7. Franklin and Wilkin were awarded nobel prize for
A. studying DNA replication.
B. Studying about RNA.
C. X-ray diffraction studeis of DNA.
D. isolating DNA.
Answer: A::C::D
Watch Video Solution
8. Down's syndrome is a case of
A. Euploidy
B. Deletion
C. Translocation
D. Aneuploidy

Answer: A::D **Watch Video Solution** 9. _____ is a gene mutation. A. Deletion B. Duplication C. Translocation D. Ploidy **Answer: D Watch Video Solution 10.** The enzyme called ____ bind to the origin of replication site. A. Replicase

B. Helicase
C. Amylase
D. Ligase
Answer: A::C
Watch Video Solution
11. In human,each cell normally consists of chromosomes.
A. 23 pairs
B. 22 pairs
C. 20 pairs
D. 12 pairs
Answer: A::B::C
Watch Video Solution

12. hydrogen bonds between the nitrogenous bases make the DNA
molecule
A. unstable
B. stable
C. unbalanced
D. disturbed
Answer: A::B
Watch Video Solution
Additional Questions Answers Fill In The Blanks
1. The protein part of which molecule is disturbed in sickle cell
anemia
Watch Video Solution

2. Mendel was a native of
Watch Video Solution
3. A cross involving two traits is called
Watch Video Solution
4. The laws of heredity were proposed by
Watch Video Solution
5. The number of chromosomes present in a human cell is
Watch Video Solution



Watch Video Solution
11. The term mutation was coined by in1901.
Watch Video Solution
12. Plant in which De vries first observed mutation
Watch Video Solution
13. Adenine and Guanine are called
Watch Video Solution
14. Thymine and cytosine are called
Watch Video Solution

15. There are base pairs in one complete turn of a DNA molecule.
Watch Video Solution
16. are two types of nitrogenous bases in DNA.
Watch Video Solution
17. sex is determined by the of an individual. Watch Video Solution
18. An inheritable change in the amount or the structure of a chromosome is called
Watch Video Solution

19. The sudden change in the structure of number of chromosmes is
calledmutation.
Watch Video Solution
20. Structural changes in the chromosomes usually occurs due to errors
in
View Text Solution
21. The addition or deletion in the number of chromosomes present in a
cell is called
Watch Video Solution
22 is the condition in which the individual bears more than the
usual number of diploid (2n) chromosomes
O watch Video Colution

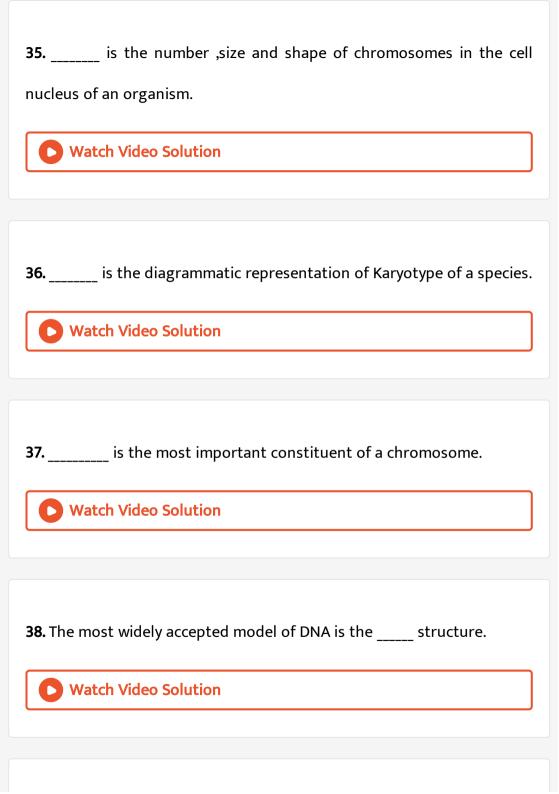
Watch video Solution
23. If an individual has three of chromosomes, the conditions is
called triploidy
Watch Video Solution
24 Triploidy plants and animal are typically
24. Triploidy plants and animal are typically
Watch Video Solution
25 plants are advantageous as they often result in increased fruit
and flower size.
Watch Video Calution
Watch Video Solution
26. is the loss or gain of one or more chromosomes in a set.
is the less of Ball of the of more amounts and set.
O wash ved a calastan

Watch video Solution
27. Down's syndrome is a genetic condition, in which there is an extra
copy of
сору от
Watch Video Solution
Watch video solution
28. Gene mutation is the abnormal protein formation in an organism.
Watch Video Solution
29 result in abnormal protein formation of a single gene.
Watch Video Solution
is a dispass saused by the mutation of a single game
30. is a disease caused by the mutation of a single gene.
A washada a calada
Watch Video Solution

1////////

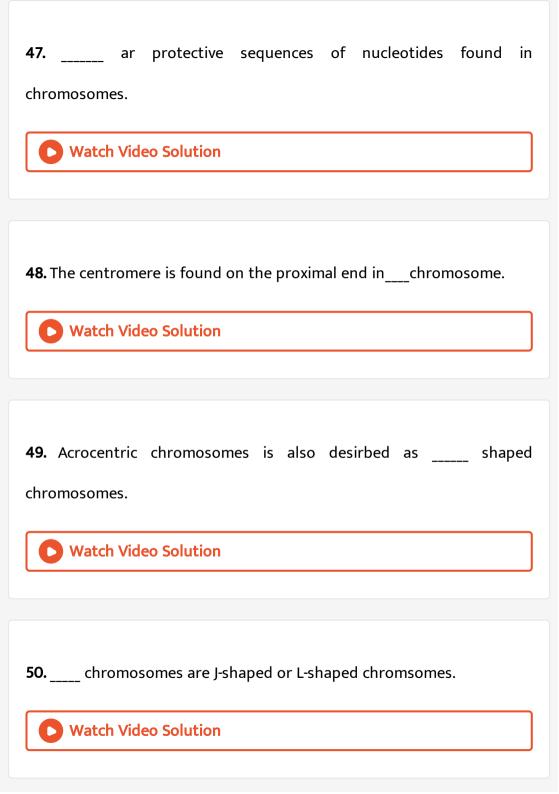
OILITIC

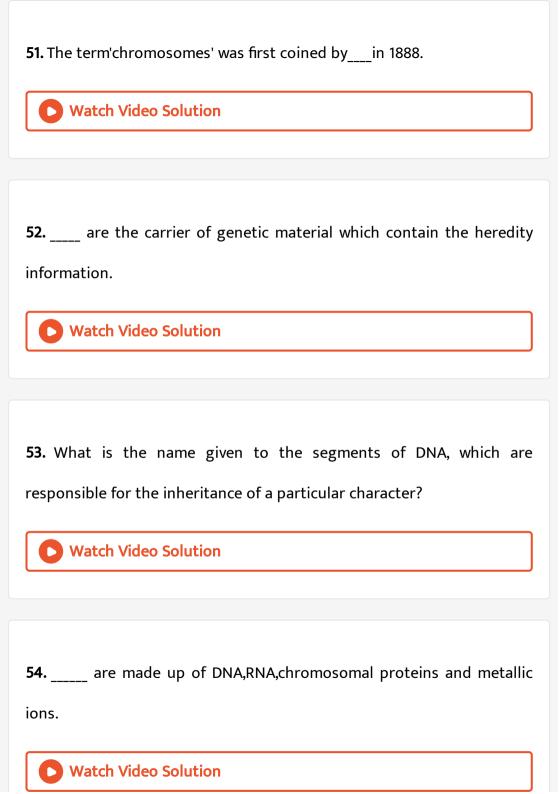
31. Each human cell contain pair of chromosomes.
Watch Video Solution
32. The eukaryotic chromosomes are classified into and
Watch Video Solution
33. contain genes that detemine the somatic characters
Watch Video Solution
34. are responsible for determining the sex of an individual.
Watch Video Solution



39. Purines and pyrimidines are bases in DNA.
Watch Video Solution
40. Pairing between the nitrogenous bases in the DNA is linked bybonds
Watch Video Solution
41. Adenine linkswith two hydrogen bonds.
Watch Video Solution
42. Watson,Crick and Wilkins were awarded Nobel prize for medicine in
Watch Video Solution

44. DNA is also called aschain. Watch Video Solution 45between the nitrogenous bases makes the DNA molecules stable. Watch Video Solution 46. The chromosomes with are called as the sat-chromosomes. Watch Video Solution	43. DNA consists of millions of
Watch Video Solution 45between the nitrogenous bases makes the DNA molecules stable. Watch Video Solution 46. The chromosomes with are called as the sat-chromosomes.	Watch Video Solution
Watch Video Solution 45between the nitrogenous bases makes the DNA molecules stable. Watch Video Solution 46. The chromosomes with are called as the sat-chromosomes.	
45between the nitrogenous bases makes the DNA molecules stable. Watch Video Solution 46. The chromosomes with are called as the sat-chromosomes.	44. DNA is also called aschain.
watch Video Solution 46. The chromosomes with are called as the sat-chromosomes.	Watch Video Solution
watch Video Solution 46. The chromosomes with are called as the sat-chromosomes.	
46. The chromosomes with are called as the sat-chromosomes.	
	Watch Video Solution
Watch Video Solution	46. The chromosomes with are called as the sat-chromosomes.
	Watch Video Solution





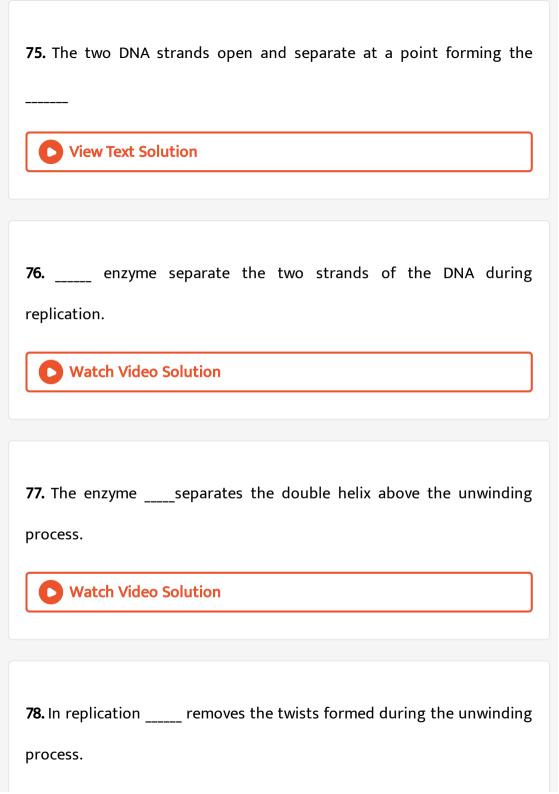
55. External expression of a particular trait is known as
Watch Video Solution
56. Mendel's famous experiments was performed onplant.
Watch Video Solution
57. Two character making up a pair of contrasting are called alleles or
Watch Video Solution
Water video soldtion
58. The character which expresses itself is calledcharacter.
Watch Video Solution

59. The character which is masked is calledcharacter.
Watch Video Solution
60. The character which is masked is calledcharacter.
Watch Video Solution
61. Chromosomes consists of two identical strands called
Watch Video Solution
62. The two arms of a chromosomes meet at a point called
Watch Video Solution

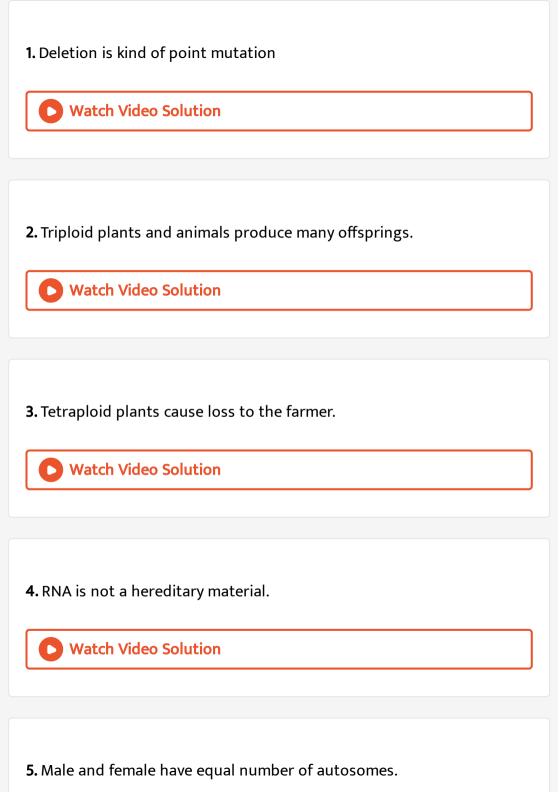
63. is transmission of characters,from one generation to the next
generation.
Watch Video Solution
64. refers to the differences shown by the individuals of the
same species.
Watch Video Solution
65. is the father of Genetics.
Watch Video Solution
66. The genotypic ratio in Medel's monohybrid cross is
Watch Video Solution

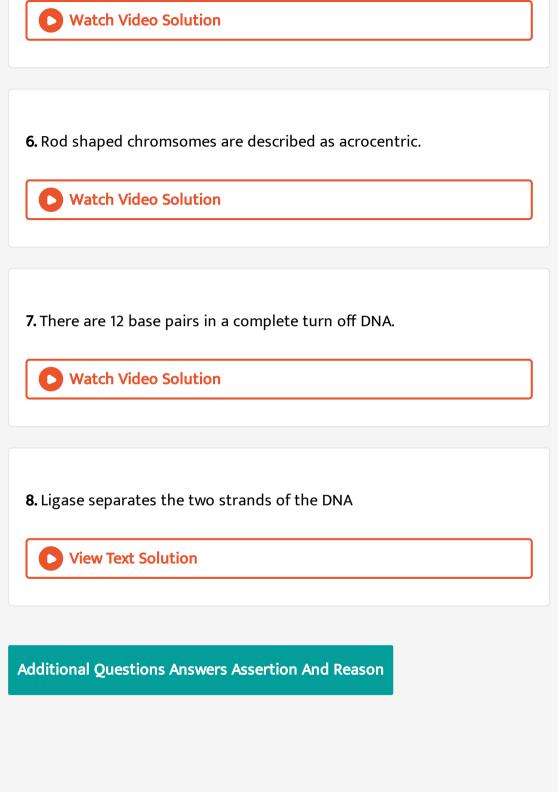
67. Tallness is represented ascharacter.
Watch Video Solution
68. Dwarfness is represented ascharacter.
Watch Video Solution
69. The elongated knob-like appebdages at one end of some chromosome is called as
Watch Video Solution
70. The region of the chromosome where the spindle fibre get attached during cell division.
Watch Video Solution

71. The end of a chromosome is called
Watch Video Solution
72. The centromere is found at the centre of the chromsome.
Watch Video Solution
73. Metacentric chromosomes are shaped chromosomes.
Watch Video Solution
74. are also called as sex chromosomes.
Watch Video Solution



View Text Solution
79. RNA primer is a short segment of
View Text Solution
80. The short segments of DNA are synthesized in a fragments.
Watch Video Solution
81. The short segments of DNA are called fragments.
Watch Video Solution
Additional Questions Answers State Whether The Following Statements Are True Or False Correct The False Statement





1. Assertion:sex of the baby depends on human male.

Reason: They are homogametic.

A. Both Assertion and reason are true and reason is not the correct explanation of assertion.

B. Both assertion and reason are true but Reason is not the correct explanation of Assertion.

C. Assertion is true Reason is false.

D. Both Assertion and Reason are false.

Answer:

DNA.



2. Assertion: There is an equal proportion of purines and pyrimidines in

Reason: Adenine links with Thymine and Guanine links with Cytosine.



3. Assertion: Law of independent assorment is based on dihybrid cross.

Reason:Thefactors of one pair assort independently of the other pair.



4. Assertion :The enzyme helicase ,bind to the origin of replication site.

Reason: Helicase separates the two strands of the DNA.



5. Assertion:DNA is responsible for the trnsmission of hereditary information of hereditary information from one generation to next generation.



6. Assertion: Human female are homogametic

Reason:In female,the gametes or the eggs formed are similar in their sex chromsome type.



Watch Video Solution

Additional Questions Answers Answer In One Word

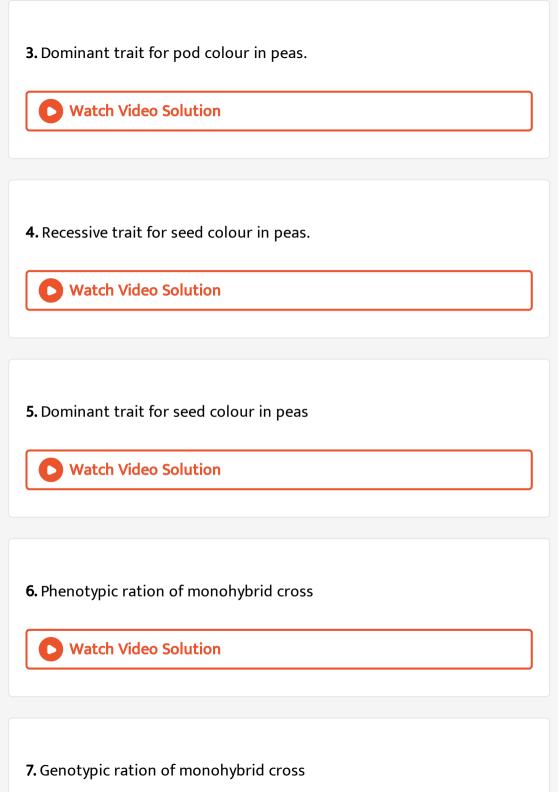
1. The unit responsible for transmission of hereditary characters.



2. The number of contrasting characters chosen by Mendel for his experiments.

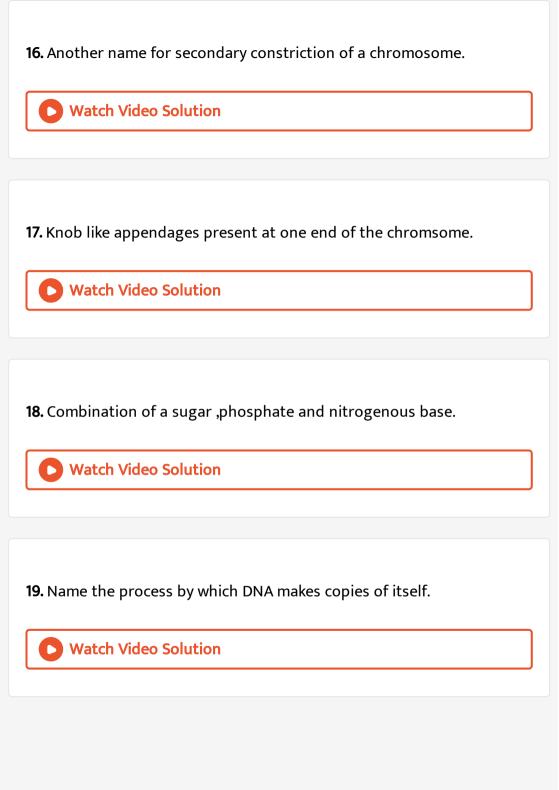


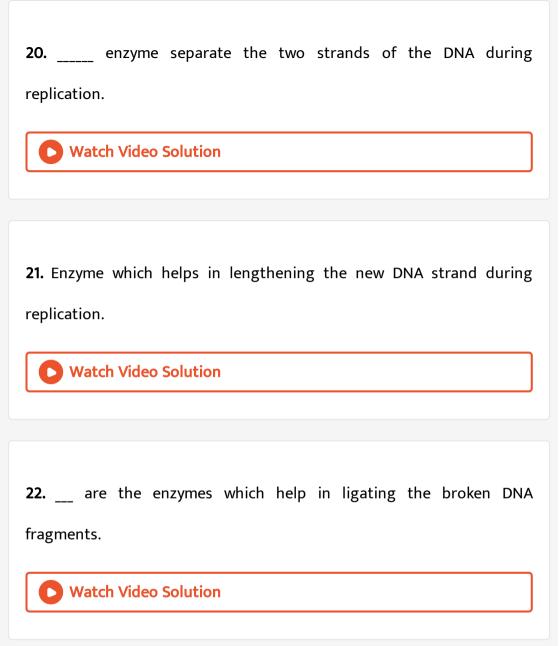
Watch Video Solution



Watch Video Solution
8. Graphical representation to calculate probability of genotypes in a genetic crosss
Watch Video Solution
9. Ration obtained in a dihybrid cross. Watch Video Solution
10. Who received the Nobel prize for his work on role of chromosomes in heredity?
Watch Video Solution
11. Who gave the term 'Chromosome '?

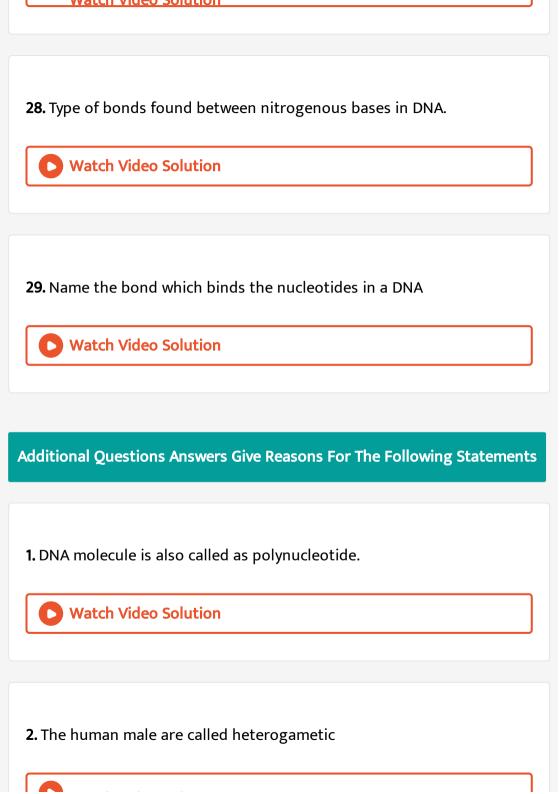
Watch Video Solution
12. What does DNA strand for?
View Text Solution
13. Point of location of a gene on a chromosome.
Watch Video Solution
14. Point of attachment of chromatids of a chromosome
Watch Video Solution
15. Bead like structures along the length of a chromomema.
Watch Video Solution





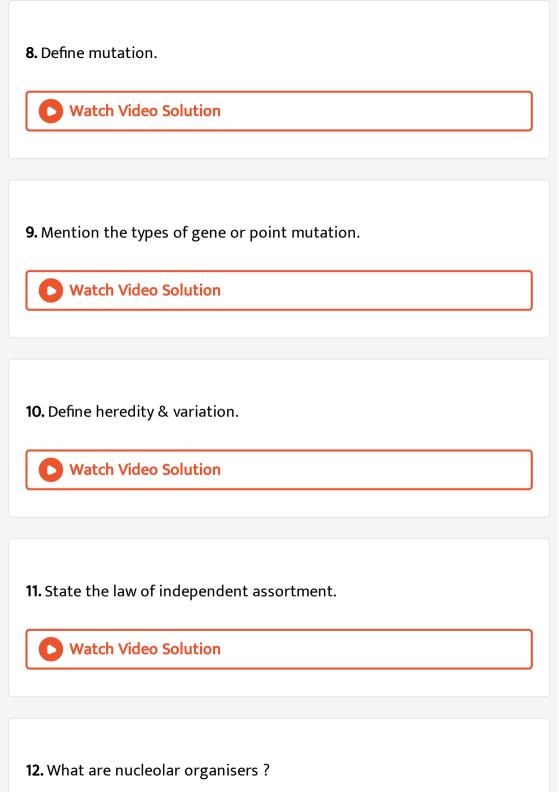
23. Short segments of DNA formed in the newstrand during replication of DNA.

Watch Video Solution
24. Condition involving changes in number of chromosomes present in a
cell.
Watch Video Solution
25. Another name for Down's syndrome.
Watch Video Solution
26. Chromosomal composition of a human sperm.
View Text Solution
27. Chromosomal composition of a human egg.
Watch Video Solution



Watch Video Solution
3. Sickle cell anaemia is caused by the mutation of a single gene.
,
Watch Video Solution
Additional Questions Answers Very Short Answers
1. What is a checker board or Punnett square?
Watch Video Solution
Water video solution
2. Define a gene.
Watch Video Solution
3 What is a Karyotyno?
3. What is a Karyotype?

Watch Video Solution
4. What is an idiogram?
Watch Video Solution
5. What is replication of DNA?
Watch Video Solution
6. What is RNA primer?
View Text Solution
7. Name the enzyme involved in DNA replication.
Watch Video Solution



Watch Video Solution
13. List any three traits of pea plant selected by Mendel for hisexperiments and mention their dominant & recessive form.
Watch Video Solution
14. Mention the symptoms of Downs syndrome. Watch Video Solution

15. State the law of segregation.

Watch Video Solution

16. What are Okazaki fragments?

Watch video Solution
17. Write a note on euploidy.
View Text Solution
18. How are chromosomes classified based on the position of centromere?
Watch Video Solution
Additional Questions Answers Long Answers
1. Write a note on DNA replication.
Watch Video Solution

2. Write a note on mutation.



Watch Video Solution

Additional Questions Answers Higher Order Thinking Skills Hots

1. Why do all the gametes formed in human females have an X-chromosome?



Watch Video Solution

Additional Questions Answers Value Based Questions

1. Mala had a huge scar on her cheek after she met with fire accident during her college days. She is worried if her baby would inherit the scar she had acquired. She clarified with her doctor, she need not worry about

