



BIOLOGY

NCERT - NCERT Biology(Tamil)

HEREDITY

Textbook Evaluation | Choose The Correct Answer

1. According to Mendal ,alletes have the following character

- A. Pair of genes
- B. Responsible for character
- C. Production of gametes
- D. Recessive factors

Answer:



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2. 9:3:3:1 ratio is due to _____

- A. Segregation

B. Crossing over

C. Independent assortment

D. Recessiveness

Answer:



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3. The region of the chromosome where the spindle fibre get attached during cell division.

A. Chromomere

B. Centrosome

C. Centromere

D. Chromonema

Answer:



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4. The centromere is found at the centre of the _____ chromosome.

A. Telocentric

B. Metacentric

C. Sub-metacentric

D. Acrocentric

Answer:



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5. The _____ units form the backbone of the DNA.

A. 5 carbon sugar

B. Phosphate

C. Nitrogenous bases

D. Sugar phosphate

Answer:



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6. Okazaki fragments are joined together by

_____.

A. Helicase

B. DNA polymerase

C. RNA primer

D. DNA ligase

Answer:



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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 autosomes

D. 46 pairs autosomes and 1 pair of allosomes.

Answer:



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8. The loss of one more chromosome in a ploidy is called_____.

A. Tetraploidy

B. Aneuploidy

C. Euploidy

D. polyploidy

Answer:



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Textbook Evaluation li Fill In The Blanks

1. The pairs of contrasting character (traits) of Mendal are called _____



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2. Physical expression of a gene is called _____



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3. The thin thread like structures found in the nucleus of each cell are called _____



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4. DNA consists of two _____ chains



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5. An inheritable change in the amount or the structure of a chromosome is called



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Textbook Evaluation Iii 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



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2. A recessive factor is altered by the presence of a dominant factor.



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3. Each gamete has only one allele of a gene.



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4. Hybrid is an offspring from a cross between genetically different parent.



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5. Some of the chromosomes have an elongated knob-like appendage known as telomere.



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6. New nucleotides are added and new complimentary strand of DNA is formed with the help of enzyme DNA polymerase.





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7. Down's syndrome is the genetic condition with 45 chromosomes.



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Textbook Evaluation Iv Match The Following

1. Match the following columns

1. Autosomes - Trisomy 21
2. Diploid condition - 9:3:3:1
3. Allosome - 22 pair of chromosome
4. Down's syndrome - $2n$
5. Dihybrid ratio - 23rd pair of chromosome



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Textbook Evaluation V Answer In A Sentence

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



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



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



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4. What is the name given to the segments of DNA, which are responsible for the inheritance of a particular character?



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5. Name the bond which binds the nucleotides in a DNA



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Textbook Evaluation Vi Short Answers Questions

1. Why did Mendel select pea plant for this experiments?



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



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3. What are allosomes?



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4. What are Okazaki fragments?



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5. Why is euploidy considered to be advantageous to both plants and animals?



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6. A pure tall plant (TT) is crossed with pure dwarf plant (tt), What would be the F_1 and F_2 generations? Explain.



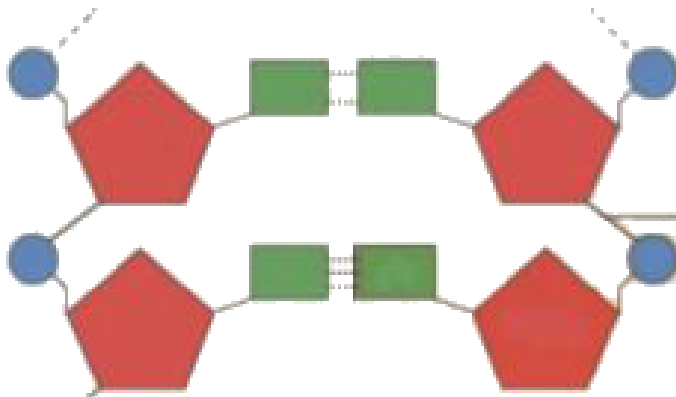
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7. Explain the structure of a chromosome



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8. Label the parts of the DNA in the diagram given below. Explain the structure briefly



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Textbook Evaluation Vii Long Answer Questions

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



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



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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?



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Textbook Evaluation Viii Higher Order Thinking Skills Hots

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



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2. Pure-bred tall pea plants are first crossed with pure-bred dwarf pea plants. The pea

plants obtained in F_1 generation are then cross-bred to produce F_2 generation of pea plants.

(a) What do the plants of F_1 generation look like?

(b) What is the ratio of tall plants to dwarf plants in F_2 generation?

(c) Which type of plants were missing in F_1 generation but reappeared in F_2 generation?



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5. 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.



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Textbook Evaluation | Value Based Question

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



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