



# **BIOLOGY**

## **BOOKS - FULL MARKS BIOLOGY (TAMIL ENGLISH)**

## HEREDITY

Textual Evaluation Solved 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: A



2. 9:3:3:1 ratio is due to\_\_\_\_

A. Segregation

B. Crossing over

C. Independent assortment

**D.** Recessiveness

Answer: C



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

A. Chromomere

B. Centrosome

C. Centromere

D. Chromonema

Answer: C

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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: B

5. The\_\_\_\_\_units form the backbone of the DNA.

A. 5 carbon sugar

B. Phosphate

C. Nitrogenous bases

D. Sugar phosphate

Answer: C

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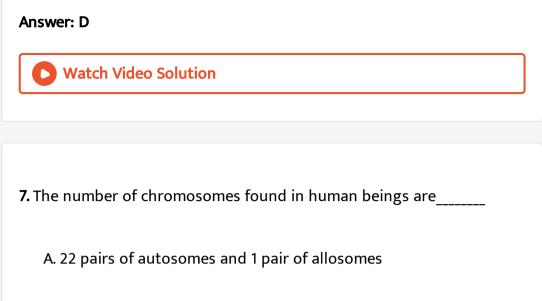
6. Okazaki fragements are joined together by \_\_\_\_\_.

A. Helicase

B. DNA polymerase

C. RNA primer

D. DNA ligase



B. 22 autosomes and 1 allosome

C. 46 autosomes

D. 46 pairsof autosomes and 1 pair of allosomes

Answer: A

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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: B

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Textual Evaluation Solved Fill In The Blanks

1. Fill in the blanks:

(i) The pairs of contrasting character (traits) of Mendel are called\_\_\_\_\_.

(ii) DNA consists of two \_\_\_\_\_ chains.



2. Physical expression of a gene is called \_\_\_\_\_



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

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

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.



**Textual Evaluation Solved Match The Following** 

Column A

Column B

- 1. Autosomes (a) Trisomy 21
- 2. Diploid condition (b) 9:3:3:1
- **1.** 3. Allosome (c) 22 pair of chromosome
  - 4. Down's syndrome (d) 2n
  - 5. Dihybrid ratio (e)  $23^{rd}$  pair of chromosome

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Textual Evaluation Solved Answer In A Sentence

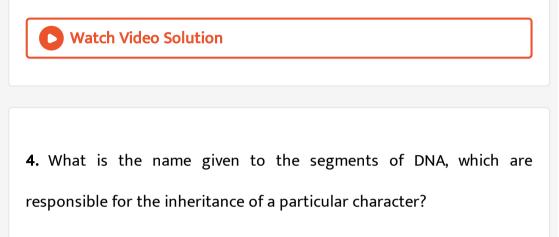
1. What is a cross in which inheritance of two pairs of contrasting

characters are studied?

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

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

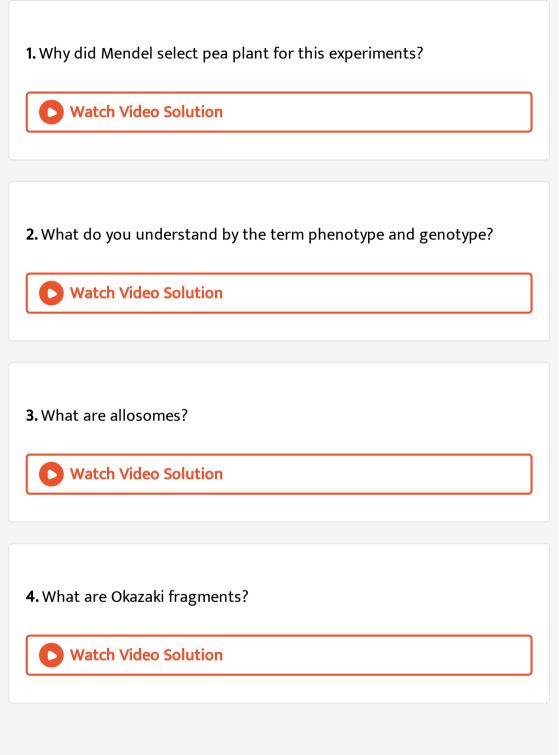


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5. Name the bond which binds the nucleotides in a DNA



**Textual Evaluation Solved Short Answer Questions** 



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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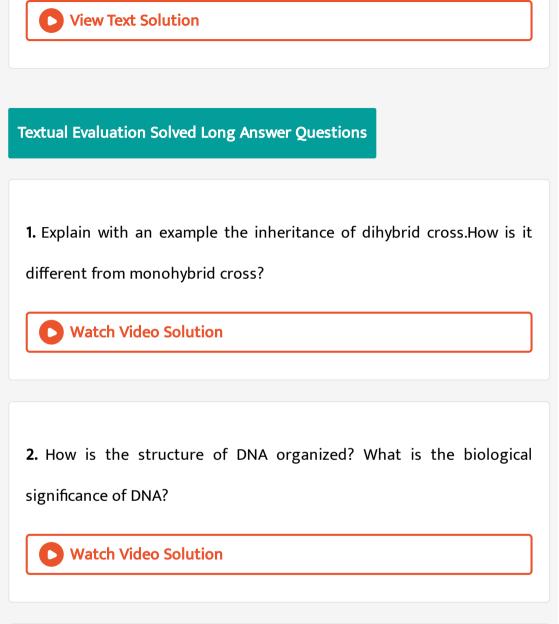
7. (i) What are allosomes?

(ii) Explain the structure of a chromosome.



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

structural briefly. Structure 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? Textual Evaluation Solved Hots

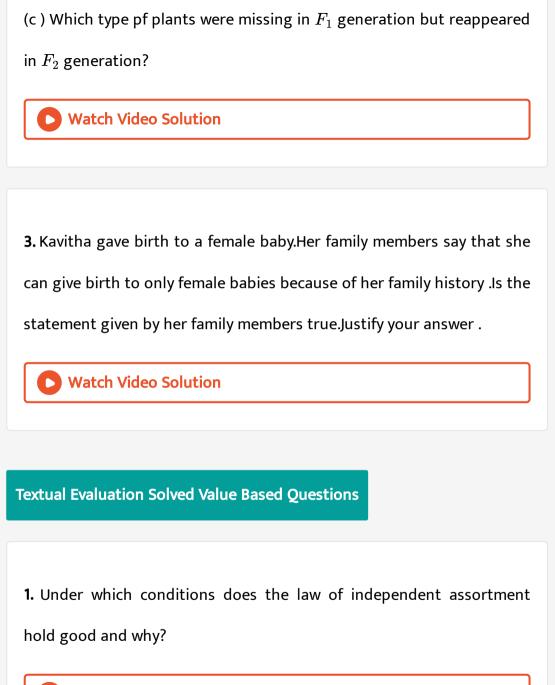
**1.** Flowers of the garden pea are bisexual and self-pollinated .Therefore ,it iks difficult to perform hybridization experiment by crossing a particular pistil with the specific pollen grains.How Mendek made it possible in his monohybrid and dihybrid crosses?

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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?



1. The branch of biology that deals with the genes, genetic variation

and heredity of living organisms is called.....

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<b>2.</b> The chromatids are held together by
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3. ....is the enzyme, which separates the double helix of DNA,

above the replication fork.



<b>4.</b> mutation is the changes occuring in nucleotide sequence of				
a gene.				
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<b>5.</b> The end of a chromosome is called				
<b>Vatch Video Solution</b>				
<b>6.</b> The constriction of chromosome at any point is called				
<b>Vatch Video Solution</b>				
<b>7.</b> The nucleotides in a helix are joined together bybonds.				
<b>Vatch Video Solution</b>				

1.

- 1. Homozygous -(a) polynucleotide
- 2. Genes -(b) human male
- 3. DNA -(c) occurs in pairs and alike
- 4. Heterozygous (d) segments of DNA
- 5. Heterogametic -(e) bind DNA to the origin of replication site
- 6. Autosome -(f) occurs in pairs and unlike
- 7. Helicase -(g) somatic characters

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Additional Questions Choose The Correct Answer

**1.** The thin long thread like structures consisting of two identical strands.....

A. Hybrid

**B.** Chromosomes

C. Genes

D. DNA and RNA

Answer: B

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2. In human, the number of chromosomes in each cell is.....

A. 22 pairs

B. 21 pairs

C. 23 pairs

D. 20 pairs

Answer: C

**3.** \_\_\_\_\_ is the number ,size and shape of chromosomes in the cell nucleus of an organism.

A. Karyotype

**B.** Heterozygous

C. Autosome

D. Nucleotide

Answer: A

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**4.** In the new complementary strand of DNA, in one strand, the daughter strand is synthesized, as a continuous strand called.....

A. Lagging strand

B. Parent strand

C. RNA primer

D. Leading strand

Answer: D

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5. The addition or deletion in the number of chromosomes present in a

cell is called\_\_\_\_\_

A. Homogametic

**B.** Polymerase

C. Ploidy

D. Nucleoside

Answer: C

1. The character which expresses itself is called dominant condition and

that which is masked is called recessive condition.

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2. The chromosomes of body cells of organism is haploid in condition

and the single set of chromosomes in gametes are diploid in condition.

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**3.** The motheris responsible in determining the sex of the child. The sperm produced by the father does not determine the sex of the child.

**4.** The human female are called Homogametic. The human males are called heterogametic.

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5. Adenine always links with Guanine with three hydrogen bonds and

cytosine always links with thymine with two hydrogen bonds.

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### Additional Questions Match

#### 1.

- 1. Waldeyar
- 2. James Watson and Crick
- 3. Hugo de vries
- 4. Langdon Down
- 5. T.H Morgan
- 6. Gregor Johan Mendel

- (a) Role of chromosome in heredity
- (b) Father of genetics
- (c) Down's syndrome
- (d) Chromosomes
- (e) Mutation
- (f) Model of DNA



Additional Questions Answer The Following

**1.**\_\_\_\_\_ is the father of Genetics.

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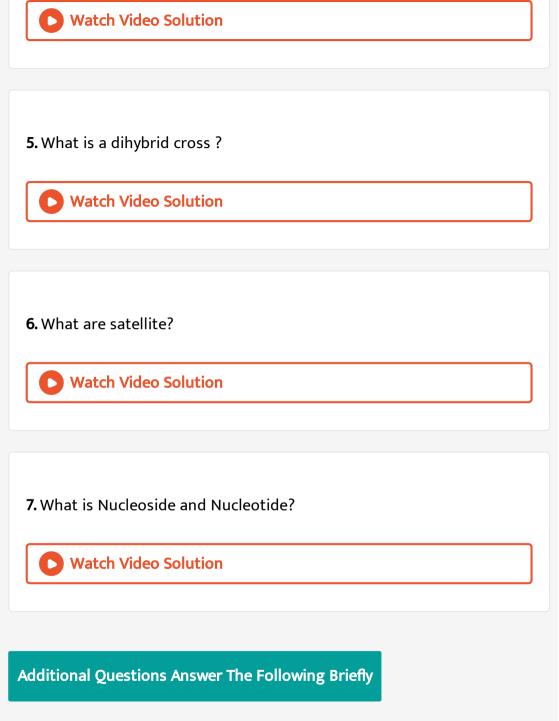
2. What are alleles ?

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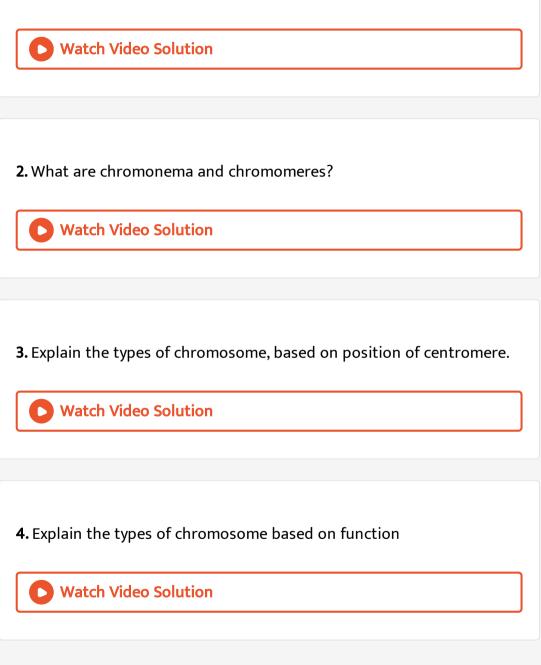
3. What is locus?

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4. What is Terminus?



### 1. What are chromosomes made up of?



### 5. What is sickle cell anaemia?

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6. Represent the phenotypic, genotypic ratio of both monohybrid cross

and dihybrid cross in 72 generation of pea plants.

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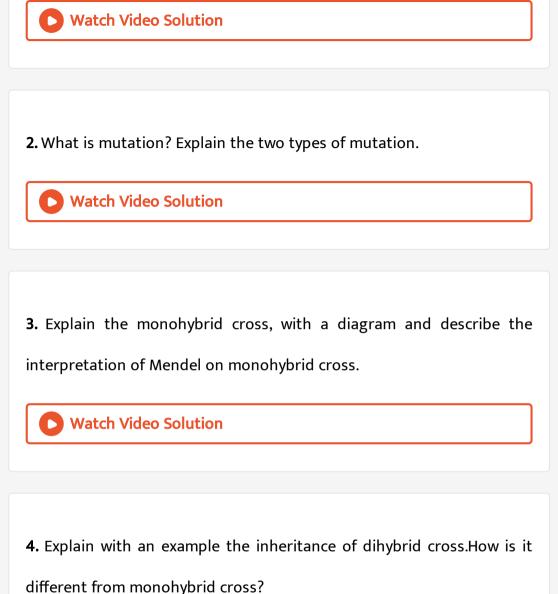
7. How do chromosomes take part in the formation of male and female

child?



Additional Questions Answer The Following In Detail

**1.** Explain the structure of chromosomes with suitable diagram.



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**5.** Explain the Watson and Crick model of DNA.

