State	PARISHRAM ACADEMY NAME of Student : _____	
	Subject : Biology	**Class : XII**
	Topic : 3 - Inheritance and Variation	**Marks :- 35**

SECTION – A

Q. 1. Select the write the correct answer: **(5 Marks)**

(i) In dihybrid cross, F_2 generation offsprings show four different phenotypes while the genotypes are - - - -
(a) six (b) nine (c) eight (d) sixteen

(ii) Phenotypic ratio of incomplete dominance *in Mirabilis jalapa.*
(a) 2 : 1 : 1 (b) 1 : 2 : 1 (c) 3 : 1 (d) 2 : 2

(iii) 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

(iv) A colour blind man marries a woman, who is homozygous for normal colour vision, the probability of their son being colour blind is -
(a) 0% (b) 25% (c) 50% (d) 100%

(v) Two sister chromatids are connected at
(a) telomere (b) chromomere (c) centromere (d) centriole

Q.2. Answer the following: **(5 Marks)**

(i) State the law of dominance.
(ii) What is test cross?
(iii) Define sex linked inheritance.
(iv) Give any 'two' name of X-linked diseases.(Any two examples)
(v) What is a aneuploidy?

SECTION – B

Attempt any Four **(8 Marks)**

Q. 3. Make a list of phenotypes that were studied by Mendel in pea plant.
Q. 4. Campare phenotype and genotype.
Q. 5. Differentiate between monohybrid and dihybrid cross.
Q. 6. Law of dominance is not universal. Justify.
Q. 7. Why are marriages between haemophilic carriers discouraged?
Q. 8. Draw a well labelled diagram of chromosome.

SECTION – C

Attempt any Three **(9 Marks)**

Q. 9. Explain monohybrid cross with the help of suit-able graphical representation.
Q. 10. With the help of suitable diagrammatic representation explain the type of gene interaction ob-served in *Mirabilis jalapa*.
Q. 11. Explain the different types of chromosomes based on the position of their centromere.
Q. 12. Mendel made a very wise choice of experimental material. Enlist the reasons behind Mendel's success.

SECTION – D

Attempt Any Two: **(8 Marks)**

Q. 13. With the help of suitable example explain dihybrid cross.
Q. 14. A carrier haemophilic female marries a nor-mal male. What will be the phenotype of progeny? Explain with suitable chart.
Q. 15. Women are often blamed for the birth of the girl child. However, it is the male sex chromosome that decides a baby's gender. How will you address this issue scientifically?