3. INHERITANCE AND VARIATION

MULTIPLE CHOICE QUESTIONS (1 MARK EACH)

1 The three principles of Mendelism are
A. Dominance, segregation and independent assortment
B. Linkage, segregation and independent assortment
C .Linkage, dominance and segregation
D. Linkage, dominance and Independent assortment.

2 Which one of the following is back cross?
A. F1 × F1
B. F1 × Recessive parent
C. F1 × Dominant parent
D. F1 × Any parent

3 RR (Red) Antirrhinum is crossed with white (WW) one. Offspring (RW) are pink .This is an example of
A. Dominant -recessive
B. Incomplete dominance
C. Hybrid
D. Supplementary genes

4 The word chromosome was coined by
A. Benda
B. Waldeyer
C. Robert Hooke
D. T.H.Morgan

5 Nullisomy is represented by.....
A. (2n-1)
B. (2n-2)
C.(2n+1)
D.(2n+2)

6 Identify the odd one:-
A. Monoploidy
B.Diploidy
C.Polyploidy
D.Hyperploidy

7 In humans, the sex chromosome complement is
A.XX-XY
B. XX-XO
C.ZZ-ZO
D. ZW-ZZ

8 A family has five daughters and expecting sixth child. The chance of its beings a son is ……
A. zero
B.25%
C.50%
D. 100%

9 In human beings 45 chromosomes/single X/XO abnormality causes
A. Down's syndrome
B. Klinfelter's syndrome
C. Turner's syndrome
D. Edward's syndrome

10 Webbed neck is characteristic of … syndrome.
A.XXX B. YY
C. XXY D. XO

VERY SHORT ANSWER TYPE QUESTIONS (1 MARK EACH)

1. Define inheritance.
2. What is allelomorph?
3. What is test cross?
4. Define euploidy.
5. Give an example of complete linkage.
6. How many linkage groups are present in *Drosophila melanogaster*?
7. Which genes show straight inheritance?
8. How drones are produced in honey bees?
9. What is the reason for 21st trisomy?
10. Give the example of X- monosomy you have studied.

SHORT ANSWER TYPE QUESTIONS (SA-I) (2 MARKS EACH)

1. Discuss any two points due to which Mendel got success in his experiment?
2. Give any two points of difference between homozygous and heterozygous.
3. Explain test cross with suitable example and state its ratios.
4. Give an account of incomplete dominance with suitable example.
5. Explain codominance in colour coat in cattle with checker board method.
6. Write an account of chromosomal theory of inheritance.
7. Write a note on sex linkage.
8. Differentiate between complete and incomplete linkage.
9. Explain mechanism of sex determination in birds.
10. Give a detailed account of thalassemia.

SHORT ANSWER TYPE QUESTIONS (SA-II) (3 MARKS EACH)

1. Enlist dominant and recessive characters in pea plant with respect to position of flower, colour of seed and colour of pod in tabulated form.
2. Give an account of pleiotropy with suitable example.
3. Describe the structure of sex chromosomes with the help of labelled diagram.
4. What is autosomal inheritance? Explain different disorders due to autosomal inheritance.
5. Explain the inheritance pattern of colour blindness with suitable chart.
6. Write a note on bleeder's disease and its inheritance with a suitable chart.
7. Explain the mechanism of sex determination in humans with suitable chart.
8. Write a note on Down's syndrome.
9. What are the different characters that develop due to Klinfelter's syndrome?
10. Give reasons for development of Turner's syndrome and also mention its symptoms.

LONG ANSWER TYPE QUESTIONS (LA) (4 MARKS EACH)

1. Define inheritance. Give statements for various laws of inheritance.
2. Explain intragenic and intergenic interaction with the help of example.
3. Explain structure of chromosomes with labelled diagram.
4. Give a detailed account of sex linked inheritance.
5. Give an account of one Mendelian and one chromosomal disorder you have studied.