

B.Sc. (CBCS Pattern) Semester-II
011B - Biotechnology Paper-II - Genetics

P. Pages : 2

Time : Three Hours



GUG/W/24/11593

Max. Marks : 50

Note : All questions are compulsory and carries equal marks.

1. Explain in detail mendelian law of inheritance. **10**

OR

a) Write a brief note on chromosome theory of inheritance. **2½**

b) Explain Co-dominance with examples. **2½**

c) Write a short note on multiple alleles. **2½**

d) Write a note on genotypic & phenotypic ratio. **2½**

2. Discuss in detail concept of crossing over. **10**

OR

a) Explain in brief concept of linkage. **2½**

b) Write a note on sex determination in plants. **2½**

c) Describe the process of non-disjunction. **2½**

d) Write a short note on molecular mechanism of crossing over. **2½**

3. Explain in detail chromosomal aberrations in plants & animals. **10**

OR

a) Write a note on Down syndrome. **2½**

b) Write a short note on aneuploidy. **2½**

c) Write a note on inversion & Translocation. **2½**

d) Explain in brief about polyploidy. **2½**

4. Explain in detail concept of gene pool, gene & genotypic frequencies. 10

OR

- a) Write a note on principle of hardy-Weinberg equilibrium. 2½
- b) Describe the process of genetic drift. 2½
- c) Write a short note on Rett syndrome. 2½
- d) Write a brief note on male infertility. 2½

5. Solve **any ten**.

- a) Define allele. 1
- b) What is phenotype? 1
- c) Write one example of co-dominance. 1
- d) What is linkage? 1
- e) Define non-disjunction. 1
- f) Define crossing-over. 1
- g) Define pericentric inversion. 1
- h) How many chromosomes are present in Klinefelter's syndrome. 1
- i) Define duplication. 1
- j) Give one example of autosomal recessive disorder. 1
- k) Name the tissue which get affected in Marfan syndrome. 1
- l) Which amino acid get mutated in sickle cell anemia. 1
