

B.Sc. (CBCS Pattern) Sem-II  
**011B - Biotechnology Paper-II : Genetics**

P. Pages : 2

Time : Three Hours



**GUG/W/22/11593**

Max. Marks : 50

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1. Discuss in detail law of dominance, law of segregation with suitable examples? **10**

**OR**

a) Discuss about multiple alleles. **2½**

b) Describe genotypic ratio with the help of suitable example. **2½**

c) Explain the non allelic interactions. **2½**

d) Add a note on chromosomal theory of inheritance. **2½**

2. Describe the concept of crossing over with respect to Holliday junction and chiasmata formation. **10**

**OR**

a) Explain the concept of sex linkage? **2½**

b) Explain mechanism of sex determination in animals? **2½**

c) Determine phenomenon of non-disjunction **2½**

d) Explain the mechanism of sex determination in plants. **2½**

3. Describe in detail chromosomal aberrations in animals. **10**

**OR**

a) Explain structural abnormalities determined by translocations. **2½**

b) Add a note on Aneuploidy. **2½**

c) Describe Turner syndrome. **2½**

d) What are insertion mutation? Give example. **2½**

4. Explain the mechanism of x-linked dominant and x-linked recessive with suitable examples. **10**

**OR**

a) Describe the basic idea of natural selection. **2½**

b) Explain principle of Hardy-Weinberg equilibrium. **2½**

c) Add a note on sickle cell anemia as autosome recessive disorder. 2½

d) Discuss Y-linked male infertility. 2½

**5. Solve any ten.**

a) What are alleles? 1

b) What is co-dominance? 1

c) Define segregation? 1

d) What is mean by homologous chromosomes. 1

e) Crossing overtakes place in which phase of Meosis. 1

f) What is Chiasmata? 1

g) What are chromosomes? 1

h) What are duplications? 1

i) Define Klinefelter's syndrome? 1

j) What is genetic drift? 1

k) Explain Marfan syndrome? 1

l) What is gene frequency. 1

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