

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

P. Pages : 2

Time : Three Hours



GUG/S/25/11593

Max. Marks : 50

1. Explain the law of independent assortment in detail. **10**

OR

- a) Explain the Genotypic ratio and phenotypic ratio. **2½**
- b) Describe the incomplete dominance with example. **2½**
- c) Write a note on Codominance. **2½**
- d) Explain the chromosome theory of inheritance. **2½**

2. Write about Holiday junction and chiasmata formation explaining concept of crossing over. **10**

OR

- a) Explain the concept of linkage. **2½**
- b) Write about sex determination in animals. **2½**
- c) Write a note on non disjunction and how it prove chromosomal theory of inheritance. **2½**
- d) Describe the molecular mechanism of crossing over. **2½**

3. Explain in detail the structural abnormality in chromosomes **10**

OR

- a) Describe chromosomal aberration in plants. **2½**
- b) Write a short note on Turner Syndrome. **2½**
- c) Write a note on Down syndrome. **2½**
- d) Explain the Aneuploidy. **2½**

4. Give detail account on Principle of Hardy Weinberg equilibrium. **10**

OR

- a) Discuss on concept of gene pool. **2½**
- b) Describe the genetic drift. **2½**
- c) Write a short note on Basic idea of natural selection. **2½**
- d) Write note on gene and genotypic frequency. **2½**

5. Solve any Ten of followings.

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| a) What is law of dominance? | 1 |
| b) What is non-allelic interactions? | 1 |
| c) Define law of segregation. | 1 |
| d) What is sex linkage? | 1 |
| e) What is mean by homologous chromosome? | 1 |
| f) What is crossing over? | 1 |
| g) What is chromosomal abnormalities? | 1 |
| h) Define polyploidy. | 1 |
| i) Which extra chromosome is present in Klinefelter syndrome male? | 1 |
| j) Define Gene flow. | 1 |
| k) What is X-linked recessive - Haemophilia. | 1 |
| l) Which tissue is affected in Marfan syndrome? | 1 |
