

## II M.Sc BIOCHEMISTRY

S.NO	SEMESTER	ODD/ EVEN	TITLE OF THE PAPER
1	IV	EVEN	MOLECULAR GENETICS
2	IV	EVEN	BIOTECHNOLOGY AND BIOINFORMATICS

### II M.Sc Biochemistry

Semester : IV

Title of the paper: MOLECULAR GENETICS

Subject Code : 15CPBC4A

#### **SECTION-A**

**6 MARKS**

1. Explain Mendelian law of genetic?
2. What is back cross? Give example?
3. What is test cross? Give example?
4. Write the difference between complete and incomplete dominance?
5. Explain co-dominance with example
6. What are lethal factors?
7. Add a note on complementary genes
8. Give an account on supplementary genes
9. What are inhibitory genes?
10. Explain epistasis with example
11. Write down the biochemical aspect of duplicating gene
12. What is pleiotrophism
13. Explain the phenomenon of conjugation
14. Explain the kinetics of mating and transfer in conjugation
15. Give an account on fertility factor in conjugation

16. Write short notes on Hfr cells
17. Explain the mechanism of gene transfer through bacteriophages
18. Give an account on site specific recombination
19. Explain the double strand break model of recombination
20. Explain holiday model recombination with suitable illustrations
21. Write short note on gene linkage
22. Explain the importance of chromosomal mapping
23. Explain crossing over
24. Explain tetrad analysis
25. Explain chromosomal abnormalities
26. Explain sex-linked inheritance
27. What is quantitative inheritance?
28. State the role of bicoid genes and nano genes in drosophila
29. Give an account on cell cycle check points
30. Explain the embryogenesis in drosophila
31. Explain the importance of genetic counseling
32. What are the possible approaches for tackling genetic disorder?
33. Explain antenatal diagnosis
34. Give an account on positive and negative eugenics
35. Explain paternity testing
36. Give an account on polymorphism

**SEC-B 15 Marks**

1. Elaborate the mendelian law of genetics with example
2. Explain (a) Test cross (7) (b) Back cross (8)
3. Explain the modification in mendelian law of genetics
4. What are (a) complementary gene(5)  
(b) Supplementary gene (5)  
(c) Inhibitory gene (5)
5. Explain the biochemical aspect of duplicating the gene and problems in pleiotrophism

6. Explain the parasexual process in bacteria
7. Explain various recombination models with suitable illustration
8. Explain chromosomal mapping with explain
9. Explain the types and significance of gene linking
10. Explain the types of crossing over with explain
11. Explain sex -linked hereditary abnormalities
12. Explain the antero-posterior specification in bacteria
13. Elaborate on cell cycle check points and its regulation
14. Explain the diagnostic procedure for genetic defects
15. Elaborate the clinical significance of antenatal diagnosis
16. Explain in detail Hardy -Weinberg law of population genetics
17. Discuss in detail on genetic counseling