

**2022**  
**B.A./B.Sc.**  
**Third Semester**  
CORE – 7  
**BOTANY**  
*Course Code: BOC 3.31*  
(Genetics)

*Total Mark: 70*  
*Time: 3 hours*

*Pass Mark: 28*

*Answer five questions, taking one from each unit.*

**UNIT-I**

1. Explain Mendel's law of inheritance. 14
2. Explain penetrance and expressivity 7+7=14

**UNIT-II**

3. Write a note on chloroplast inheritance in *Mirabilis jalapa*. 14
4. What is matroclinous inheritance? Explain the pattern of shell coiling in snails. 4+10=14

**UNIT-III**

5. Explain linkage and crossing over. Write the characteristics of crossing over. 4+10=14
6. What are linkage maps? With the help of suitable example explain how linkage maps are drawn. 4+10=14

**UNIT-IV**

7. Write notes on DNA repair mechanism. 14
8. With the help of suitable example, explain how mutation can be detected. 14

## UNIT-V

9. With the help of diagram explain the structure and function of rII locus.

14

10. Write notes on genetic variation and speciation.

7+7=14

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