

BS/2110

C5- GENETICS (BHB12)

549/INH

Attempt two question from the each Section A and B and the section C is compulsory

Time 3 hrs

MM : 74

Section A

1. Define cell cycle. Explain various stages of meiosis with well-labeled diagram 11
2. Define epistasis. How does it differ from dominance? Explain the inheritance of dominant epistasis with the help of suitable example 11
3. Describe the ultra structure of typical eukaryotic chromosome and also draw a well labeled diagram 11
4. What are transposable elements? Discuss about transposons and retrotransposon in detail 11

Section B

5. How can mutations be induced in bacterial cells? Describe in detail the molecular mechanism underlying mutagenesis. 11
6. Discuss about various abnormalities in chromosome structure with suitable example 11
7. Is cytoplasmic inheritance really non-Mendelian? Substantiate your answer with suitable examples 11
8. What are various abnormalities due to sex chromosomes. Write their features also 11

Section C

9. Explain the following (15x2) 30
 - i. Pseudo allele
 - ii. Mitosis
 - iii. Chromatin
 - iv. Satellite DNA
 - v. Giant chromosome
 - vi. Introns
 - vii. Epistasis
 - viii. Criss-cross inheritance
 - ix. Sex influenced inheritance
 - x. Point and gross mutation
 - xi. Ames test
 - xii. Physical and Chemical mutagens
 - xiii. Barr bodies
 - xiv. Genetic drift
 - xv. Natural selection