

**I Semester B.Sc Degree Examination, February/March-2022**  
**BIOTECHNOLOGY**  
**Paper-1 (BT1DSC01): CELL BIOLOGY AND GENETICS**  
**CBCS Scheme- NEP 2021**

**Model Paper**

**Duration: 3Hrs**

**Maximum Marks: 60**

**Section A**

**I. Answer the following in one word or sentence each:**

**1×10=10**

1. Karyokinesis
2. Give dihybrid cross F2 ratio.
3. Who discovered mitochondria?
4. Down's Syndrome
5. Kappa particles
6. Name the power house of the cell
7. Define Diplotene.
8. Peroxisomes
9. What are facultative heterochromatin's?
10. Define test cross

**Section B**

**II. Write Short notes on the following**

**2×5=10**

1. Cell wall.
2. Multiple alleles
3. Cell senescence
4. Euploidy
5. Linkage

**Section C**

**III. Answer any four of the following**

**5×4=20**

1. Explain the structure of Mitochondria and add a note on its functions.
2. Explain the stages in Prophase I.
3. Define crossing over. Explain the mechanism and its significance.
4. Classify chromosomes based on the position of centromere.
5. Explain incomplete dominance with an example.
6. Define multiple allelism. Explain with a suitable example.

**Section D**

**IV. Answer any two of the following**

**10×2=20**

1. What are complementary genes? Explain with reference to flower color in sweet peas.
2. Explain the structure and functions of chloroplast.
3. Explain different phases of Mitosis. Add a note on its significance.
4. Explain chromosomal aberrations with examples.