

**B.Sc. - Biotechnology**  
**I Semester End Examination March/April 2022**  
**CELL BIOLOGY AND GENETICS**

Course Code: BT1DSC01

Time: 2 hours

QP Code: 1019

Total Marks: 60

**Instruction to candidates:**

1. All sections are compulsory
2. Draw neat labelled diagram wherever necessary

**Section A**

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

**1×10=10**

1. What is Phagocytosis?
2. What is Phenotype?
3. Who discovered ribosomes?
4. Give the Chromosome complement of Down Syndrome.
5. What are base analogues?
6. Define Pachytene.
7. Achromatic apparatus.
8. Peroxisomes.
9. What are kinetochores?
10. Define Epistasis

**Section B**

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

**2×5=10**

1. Cell theory.
2. Hemophilia.
3. Synaptonemal Complex.
4. Aneuploidy.
5. Coupling and Repulsion hypothesis.

**Section C**

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

**5×4=20**

1. Explain the functions of plasma membrane.
2. Explain the structure of lamp brush chromosome with the help of neat labelled diagram.
3. Explain Nucleosome model with neat labelled diagram.
4. Define crossing over. Explain the mechanism and its significance.
5. Explain incomplete dominance with an example.
6. What are supplementary genes? 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 Nucleus with neat labeled Diagram.
3. Explain different phases of Meiosis. Add a note on its significance.
4. Define Mutation. Describe chemical mutagens and their mode of action.

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