



## M.Sc. II Semester Degree Examination, October - 2023

### BOTANY

#### Cell Biology

#### (NEP)

Time : 3 Hours

Maximum Marks : 70

**Note :** Answer *any five* of the following. Question No. 1 **Compulsory**.

- |    |   |    |
|----|---|----|
| 1. | (a) Explain in detail about the chromatin organization.       | 10 |
|    | (b) Write short note on chromatin remodelling.                | 4  |
| 2. | Write a short note on :                                       |    |
|    | (a) Structural chromosomal abnormalities.                     | 10 |
|    | (b) Aneuploidy.   | 4  |
| 3. | (a) Describe the chromosome break points mapping.             | 10 |
|    | (b) Explain the principle and applications of FISH technique. | 4  |
| 4. | Write a short note on :                                       |    |
|    | (a) Endoplasmic reticulum                                     | 5  |
|    | (b) Chloroplast   | 5  |
|    | (c) Extracellular matrix                                      | 4  |
| 5. | (a) Give a detailed account on apoptosis pathways.            | 10 |
|    | (b) Explain the different phases of cell cycle.               | 4  |
| 6. | Write short note on :   |    |
|    | (a) Components of chromatin                                   | 5  |
|    | (b) Nucleosome solenoid model                                 | 4  |
|    | (c) Chromosomal associated syndrome                           | 5  |
| 7. | Give a brief account on :                                     |    |
|    | (a) Karyotype and its significance                            | 5  |
|    | (b) Secretory pathway   | 4  |
|    | (c) Cytoskeleton  | 5  |
| 8. | Write a short note on :                                       |    |
|    | (a) Sister chromatid exchangers                               | 5  |
|    | (b) Peroxisomes   | 5  |
|    | (c) Chromosome segregation in mitosis                         | 4  |

