

**P-211**

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## **MSCZO-506**

### **Concepts of Cell Biology and Genetics**

M.Sc. Zoology(MSCZO)

2nd Semester Examination, 2023 (June)

**Time : 2 Hours]**

**Max. Marks : 70**

**Note :** This paper is of Seventy (70) marks divided into two (02) Sections A and B. Attempt the questions contained in these sections according to the detailed instructions given therein.

### **SECTION–A**

#### **(Long Answer Type Questions)**

**Note :** Section 'A' contains Five (05) long answer type questions of Nineteen (19) marks each. Learners are required to answer any Two (02) questions only.

(2×19=38)

1. Give an account of the structure and functions of chromosomes.

2. Give a comparative account of mitosis and meiosis. Give examples of tissues in which they occur.
3. Discuss in detail various aspects of somatic hybridization. What are its applications?
4. Explain in detail the mechanism of conjugation in bacteria describing the role of sex factor with particular reference to  $f^+$  and Hfr strains.
5. Give detailed account of prokaryotic and eukaryotic genomes.

## **SECTION-B**

### **(Short Answer Type Questions)**

**Note :** Section 'B' contains Eight (08) short answer type questions of Eight (08) marks each. Learners are required to answer any Four (04) questions only.  $(4 \times 8 = 32)$

1. Describe major genes involved in the differentiation of sex at somatic level as well as in the germ line of drosophila.
2. Write short note on chromosomal packaging and the proteins involved in it.
3. Explain genetic regulations of meiosis.

4. Write note on :
    - (a) Down's syndrome.
    - (b) Sickle cell anaemia.
  
  5. Describe the role of maturation promoting factors in mitosis.
  
  6. Write short notes on :
    - (a) DNA Fingerprinting.
    - (b) Flow-cytometry.
  
  7. What is viral genome. Explain.
  
  8. What is bacterial transformation and C-Value paradox?
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