

**K-360**

Total Pages : 3

Roll No. ....

**MSCBOT-604**

**Molecular Biology and Biotechnology of Plants**

M.Sc. Botany (MSCBOT)

3rd Semester Examination, 2023 (Dec.)

**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. Candidates should limit their answers to the questions on the given answer sheet. No additional (B) answer sheet will be issued.

**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. With the help of well labelled diagram explain different features and components of Watson and Crick model of DNA.
2. Explain how gene regulation occurs in eukaryotes.
3. What do you understand by intellectual property rights? Explain about copyright and trademark.
4. Explain different applications of biotechnology.
5. What is the process of somatic hybridization. Describe its applications in detail.

## **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. (4×8=32)

1. Differentiate between DNA and RNA.
2. Briefly describe about mitochondrial and chloroplast DNA.
3. How are molecular markers utilized in plant breeding?

4. What is plant tissue culture? In respect to plant tissue culture explain about androgenesis.
  5. Write an explanatory note on patents.
  6. Define the terms: totipotency, clonal propagation, hybrid, biotechnology.
  7. What is trade secret? How it can be protected?
  8. What is genetic engineering? Describe any two methods of gene transfer.
-

