



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

### BOTANY

#### SE 2 : Plant Biotechnology

#### (NEP)

Time : 3 Hours

Maximum Marks : 70

**Notes :** (i) Answer **any five** of the following questions.

(ii) Question. No. **1** is **compulsory**.

1. Discuss the requirements of the plant tissue culture laboratory basic organization, instruments and equipment. **14**
2. Explain the principle and applications of root and leaf cultures. **14**
3. Describe the isolation techniques, purification and culture of protoplasts. **14**
4. Discuss the types of secondary metabolites formation and storage in plants. **14**
5. Describe the techniques in *in vitro* production of salt, drought and disease - resistant plants. **14**
6. Explain the principle, culture techniques and applications of anther and pollen cultures. **14**
7. Write short note on :
  - (a) Haploid culture and its uses in crop improvement. **7**
  - (b) Techniques of selecting cell lines with increased secondary metabolites levels. **7**
8. Describe the principle and applications of hairy root culture. **14**

- o o o -

