

PE-500

(544) M.Sc. BOTANY (fourth Semester)

EXAMINATION-June 2022

Compulsory/Optional

Group-

Paper -I

Name/ Title of the paper: Plant cell, Tissue and Organ culture

Time: 3 hours]

[Max. marks: 80

[Minimum passing marks-29

Note: Answer from both the section. The figure in the right-hand margin indicates marks.

Section (A)

- 1) Answer the following in only short: - (1X10=10)
1. What is the name of delayed decaying variety of Tomato?
 2. Name of the gene which has been used in golden rice?
 3. Undifferentiated mass of cultured cells is called as?
 4. HEPA is used in which instrument of biotechnology?
 5. Give the role of PEG?
 6. Give the definition of cybrid?
 7. Anticancerous drug Taxol is obtained by tissue culture of which plant?
 8. Define clones
 9. What is somaclones ?
 10. Mean of 1,2,3,4,5,6,7,8,9
- 2) Answer very precisely and brief- (2X5=10)
1. Totipotency
 2. Somatic embryogenesis
 3. Cryopreservation
 4. Define median
 5. Protoplasm and protoplast

Section (B)

- 3) Answer the following in detail? (15X4= 60)
1. Give the basic concept, principle and scope of biotechnology?
OR
Give the general introduction of plant cell and tissue culture?
 2. Give the mechanism, techniques and utility of somatic embryogenesis?
OR
Give the possibilities of achievements and limitations of protoplast research?

3. Give a brief note on Addition of cryoprotectants, freezing, storage, thawing, determination of survival viability, vitrification, encapsulation and dehydration.

OR

Write a brief note on secondary metabolites?

4. Find the mean or mode of following data

Age Groups	Frequency
0 - 10	40
10 - 20	53
20 - 30	58
30 - 40	64
40 - 50	72
50 - 60	49
60 - 70	36
70- 80	52

Or

Write the role of biometry in the research of plant science?