

This question paper contains 2 printed pages.

M.Sc. (P)

Roll No. ....

5641

Cel. & Mol. Bio. of Pla.

M.Sc. (Previous) EXAMINATION - 2022

BOTANY

FIRST PAPER

(Cell & Molecular Biology of Plants)

Time Allowed: Three Hours

Maximum Marks: 100

1. Each theory paper will have 9 questions, out of which a student has to attempt 5 questions and the question No. 1 will be compulsory. The question No. 1 will carry 20 marks and will be of short type of questions with a limit of 20 words.
2. No supplementary answer book will be given to any candidate. Hence the candidates should write the answer precisely in the main answer book only.
3. All the parts of one question should be answered at one place in the answer-book. One complete question should not be answered at different places in the answer-book.

1. Write short answers for the following :

10x2=20

- (a) What are caspases ?
- (b) Differentiate between cytosol and cytoplasm.
- (c) Define gene expression.
- (d) Write two features of the chloroplast genome.
- (e) What is the principle of FISH ?
- (f) What are microfilaments and microtubule, made?
- (g) What is the function of nucleolus ?
- (h) What is a membrane receptor and where is it located?
- (i) In a ds DNA 30% adenine is present. What is the percentage of other nitrogenous bases ?
- (j) Write two functions of golgybody.

UNIT - I

2. Write structure and functions of the following :

10+10=20

- (i) Cell wall
- (ii) Plasmodesmata

OR

- (10) Discuss the various models of cell membrane structure. 20

UNIT - II

3. What are genetic markers? Describe the principle, method and applications of RFLP. 2+8+6+4=20

OR

Explain the following: 10+10=20

(a) Nuclear pore structure

(b) Splicing

UNIT - III

4. What is protein sorting? Discuss the protein targeting to mitochondria. 2+18=20

OR

Write short notes on the following 10+10=20

(a) Organization of cytoskeleton

(b) Role of tRNAs in protein synthesis

UNIT - IV

5. Write short notes on the following 10+10=20

(a) Confocal microscopy

(b) Lysosome

OR

Explain the role of cyclins and cyclin-dependent kinases in cell division. 20