M.Sc.- I (Botany) CBCS Pattern Semester-II

PSCBOTT07 - Cell and Molecular Biology-I

P. Pages : 1 **GUG/W/23/11197**

Time : Three Hours * 6 2 2 4 * Max. Marks : 80

Notes : 1. All questions are compulsory and carry equal marks.
2. Draw well labeled diagrams wherever necessary.

1. Describe the structure of Plasmodesmata along with its role in movement of different molecules and in comparison with gap junction in detail. **16**

OR

Write on-

a) Structure and function of Ion carriers & channels. **8**

b) Cell wall – structure, biogenesis and cell differentiation. **8**

2. Describe organization and role of Microtubules and Microfilaments in details. **16**

OR

Write on-

a) Chloroplast and plant vacuoles: Ultra-structure and functions. **8**

b) Peroxisomes and Endoplasmic Reticulum: Ultra-structure and functions. **8**

3. Describe ultra structure of Nucleus with special emphasis on nuclear pores and nucleolus. **16**

OR

Write on-

a) Prokaryotic DNA replication. **8**

b) DNA damage and repair. **8**

4. Give detail mechanism on Gene induction involved in phenylpropanoid metabolism and describe PR proteins and R-genes. **16**

OR

Write on-

a) Plant metabolism in response to biotic stress. **8**

b) Plant defense mechanism – passive and active. **8**

5. Write short notes on – **16**

a) Fluid mosaic model b) Motor movements

c) B and Z forms of DNA d) ROS production

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