

M.Sc.(Botany) (CBCS Pattern) Semester - III  
**PSCBOTT10 - Paper-X : Cell and Molecular Biology-II**

P. Pages : 1

Time : Three Hours



GUG/S/23/11242

Max. Marks : 80

- Notes : 1. All questions are compulsory and carry equal marks.  
2. Draw well labeled diagram whenever necessary.

1. Explain in detail the Mechanism of translation in Prokaryotes and Eukaryotes. **16**

**OR**

Write on:-

- a) Structure and function of ribosomes. **8**  
b) Types of RNA and their function. **8**

2. Explain gene regulation in prokaryotes and eukaryotes. **16**

**OR**

Write on:-

- a) Protein targeting in Plastids. **8**  
b) Spliceosome-mediated RNA Splicing. **8**

3. Explain the genetic marker and construction of the genetic map in detail. **16**

**OR**

Write on:-

- a) Mapping of a bacterial gene through transformation. **8**  
b) Role of RecA and RecBCD enzyme in recombination. **8**

4. What is cell cycle? Explain the control mechanism of the cell cycle and add a note on the role of cyclin and cyclin dependant kinases. **16**

**OR**

Write on: -

- a) Programmed cell death. **8**  
b) Calcium-calmodulin cascades. **8**

5. Write short notes on:-

- a) Structural level of protein. **4**  
b) Introns and their significance. **4**  
c) Bacterial Conjugation. **4**  
d) FISH **4**

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