

M.Sc. (Previous) EXAMINATION - 2022

BIO - TECHNOLOGY

First Paper

[Cell Biology]

**Time Allowed: Three Hours**

**Maximum Marks: 100**

The theory question paper will be divided into two parts A and B. Part A of question paper shall be compulsory and contain 10 (ten) very short answer type questions of 20 words, covering entire syllabus, each carrying 2 (two) marks, with a total of 20 marks.

Part B of question paper will have 4 questions having 100% internal choice. Each question will carry 20 marks, with a total 80 marks.

No supplementary answer book will be given to any candidate. Hence the candidates should write the answer precisely in the main answer book only.

All the parts of one question should be answered at one place in the answer book. One complete question should not be answered different places in the answer book.

**PART - A**

1. Define following terms:

2X10=20

- (a) Aquaporins
- (b) Trans Golgi
- (c) Symport
- (d) B chromosome
- (e) FISH
- (f) Rb Protein
- (g) Death domain
- (h) Adenylate cyclase
- (i) Quorum sensing
- (j) Kinetochore

## PART - B

2. Give a detailed account of following: 10+10=20  
(a) NPC (b) ER

**OR**

Give a detailed account of organization and function of mitochondrial and chloroplast genome. 20

3. Explain the following with suitable diagrams: 10+10=20  
(a) Cell fusion experiment of Rao and Johnson  
(b) Activation of cyclin-cdk complex

**OR**

Briefly discuss the following: 6+7+7=20

- (a) Securin - Separase  
(b) DNA Cot curve  
(c) Plasmodesmata
4. Give a detailed account of various second messengers and their role in signal transduction. 20

**OR**

Write the structure, function and molecular mechanism of Tyrosine Kinase linked Receptor. 20

5. Describe the mechanism of apoptosis with suitable diagrams. 20

**OR**

Write notes on following: 10+10=20

- (a) Chromosome microdissection and microcloning  
(b) DNA damage check point

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