

Roll No. :

Total No. of Questions : 16]

[Total No. of Printed Pages : 3

BIOTSEM-135

M.Sc. (Ist Semester) Examination Dec., 2022

BIOTECHNOLOGY

Paper -BT-102

(Cell Biology)

Time : 3 Hours]

[Maximum Marks : 40

The question paper contains three Sections.

Section-A

(Marks : 1 × 10 = 10)

Note :- Answer all *ten* questions. Answer should not exceed **50** words. Each question carries **1** mark.

Section-B

(Marks : 3 × 5 = 15)

Note :- Answer *five* questions by selecting at least *one* question from each Unit. Answer should not exceed **200** words. Each question carries **3** marks.

Section-C

(Marks : 5 × 3 = 15)

Note :- Answer any *three* questions by selecting at least *one* question from each Unit. The answer should not exceed **500** words. Each question carries **5** marks.

Section-A

1. (i) Define the Plasmodesmata.
- (ii) What is Mesosomes ?

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- (iii) What do you mean by Checkpoints ? Explain the role of G2 checkpoint in Mitosis.
- (iv) Differentiate between heterochromatin and Euchromatin.
- (v) Define the Hematopoiesis.
- (vi) What are Aquaporins ?
- (vii) Define the Heterophagy.
- (viii) Explain the role of Janus Kinases.
- (ix) What are Second Messengers.
- (x) How does quorum sensing help to solve antibiotic resistance ?

Section-B

Unit-I

- 2. Write functions of cell wall.
- 3. Why Endoplasmic reticulum called endoskeleton of cell ?
- 4. Explain the core glycosylation.

Unit-II

- 5. Role of securin and separin in Mitosis.
- 6. Importance of Kinetochore during Mitosis process.
- 7. Explain the controlled degradation of cyclin.

Unit-III

- 8. Explain the role of calmodulin in signal transduction.
- 9. Explain the types of G-proteins.
- 10. Role of Prostaglandin in muscle function.

Section–C

Unit–I

11. Explain the various types of cell-cell functions.
12. Function of Golgi complex.

Unit–II

13. Explain the genetical and Evolutionary significance of Mitosis and Meiosis.
14. What are the significance of check points during cell cycles.

Unit–III

15. Explain the role of calcium ions as secondary messenger.
16. Briefly describe the quorum sensing.