

(i) Printed Pages : 3

Roll No.

(ii) Questions : 9

Sub. Code :

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Exam. Code :

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B.Sc. (Hons.) 3rd Semester

1125

BIO-TECHNOLOGY

Paper : BIOT-Sem-III-V-T : Animal Cell Culture

Time Allowed : Three Hours]

[Maximum Marks : 67

Note :- Attempt **five** questions in all. Q.1 is compulsory. Select **one** question from each Unit.

1. (a) Define Protein Free Media.
- (b) What are Cell Adhesion Molecules ?
- (c) What is provenance of a cell line ?
- (d) Define heat inactivation of serum.
- (e) Define Cell Strain.
- (f) What is a Finite Cell Line ?
- (g) What is Transfection ?
- (h) What is a split ratio for cell subculture ?
- (i) Name two cryopreservants used in cell culture.
- (j) Name the mechanical methods for mechanical disaggregation.

1.5×10

UNIT-I

2. (a) Discuss the mechanism of cell signalling in cultured cells. 7
- (b) Explain the role and design of CO₂ incubator in a cell culture lab. 6
3. (a) Discuss how metabolic capabilities of a cultured animal cell vary from those in a physiological environment. 7
- (b) Discuss the different types of cell adhesion molecules and their function. 6

UNIT-II

4. (a) Discuss the role of CO₂ in the media. 5
- (b) Explain the enzymatic methods of cell disaggregation. 8
5. (a) Discuss the reasons of transformation in animal cells. 7
- (b) Discuss the role, criteria and method of subculturing a monolayer culture. 6

UNIT-III

6. (a) Describe the characteristics and growth curve of a finite cell line. 8
- (b) Discuss the microtitration assay for cytotoxicity measurement. 5

7. (a) Explain the origin and characteristics of any one cancerous cell line. 7
- (b) Discuss the features of differentiated cells and the method of their origin in media. 6

UNIT-IV

8. (a) Discuss the methods of Cell Line characterization. 8
- (b) Explain how animal cells are preserved by Cryoprotectants. 5
9. (a) Discuss any two methods for transformation of finite cell lines. 8
- (b) Describe the significance of Biosafety in animal cell culture. 5