

(i) Printed Pages : 3]

Roll No.

(ii) Questions : 9]

Sub. Code :

0	9	7	6
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Exam. Code :

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B.Sc. (Hon's.) 3rd Semester Examination

1127

BIOTECHNOLOGY

(Animal Cell Culture)

Paper : BIOT-III-V-T

Time : 3 Hours]

[Max. Marks : 67

Note :- Attempt *five* questions in all. Question No. 1 is compulsory. Select *one* question from each unit.

1. (i) How culture medium is buffered ?
- (ii) What is the use of a conditioned medium ?
- (iii) What should be preferred split ratio for finite cell lines and why ?
- (iv) How cell growth can be assessed ?
- (v) What is the purpose of Biosafety management ?
- (vi) What is cell immortalization ?

NA-300

(1)

Turn Over

(vii) What substrates are preferred for growth of monolayer culture ?

(viii) Give uses of balanced salt solution.

(ix) How a cell line evolves ?

(x) What is a survival assay ? $1\frac{1}{2} \times 10 = 15$

Unit-I

2. (a) Enlist major equipments required in animal cell culture laboratory and their use.

(b) What is ECM ? Discuss its components. 8,5

3. (a) Write a note on cell adhesion molecules and cell differentiation.

(b) Give important historical development in animal cell culture technology. 8,5

Unit-II

4. (a) What is trypsinization and its use in tissue disaggregation ?

(b) What is the role of serum and its components in a culture medium ? 7,6

5. (a) Write notes on the following :

(i) Monolayer subculture.

(ii) Serum free media.

(b) What is a primary culture ? Discuss brief methodology to initiate primary culture. 8,5

Unit-III

6. (a) Discuss various applications of cytotoxicity analysis.
- (b) Discuss stages of growth of cultured cells. 6,7
7. (a) Give *five* commonly used animal cell lines, give their origin and features.
- (b) What is cell viability ? How cell viability is checked ? 10,3

Unit-IV

8. (a) What is cell line authentication ? Give methods used to characterize animal cell lines.
- (b) How animal cells can be cryopreserved ? What precautions should be taken during this process ? 7,6
9. (a) How monoclonal antibodies are produced and screened ?
- (b) Write short notes on the following :
- (i) Cryoprotectants
- (ii) Bioethics. 8,5

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