

**2024/FYUG/ODD/SEM/
BTC DSC-202T/244**

FYUG Odd Semester Exam., 2024

**BIOTECHNOLOGY
(3rd Semester)**

Course No. : BTC DSC-202T

(Animal Cell Culture)

Full Marks : 70

Pass Marks : 28

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

UNIT—I

1. Answer any *two* from the following : 2×2=4
 - (a) What is cell culture?
 - (b) Write down the applications of organ culture.
 - (c) What are the disadvantages of using serum in culture?

2. Answer any *one* from the following :
 - (a) Write about stimulating natural condition for the growth of animal cell. Add a note on physiochemical properties and application of culture media. 6+4=10

(2)

- (b) Write notes on the following : $5 \times 2 = 10$
(i) Metabolic capabilities of animal cell
(ii) Natural media and artificial media

UNIT—II

3. Answer any *two* from the following : $2 \times 2 = 4$
(a) What is sterilization?
(b) What do you mean by contact inhibition?
(c) What is feeder layer?
4. Answer any *one* from the following :
(a) Write down the technique of isolation of cells and tissues for culturing. Add a note on anchorage dependent and non-anchorage dependent growth of cells. $6 + 4 = 10$
(b) Write notes on the following : $5 \times 2 = 10$
(i) Primary cell culture
(ii) Adherent and suspension culture

UNIT—III

5. Answer any *two* from the following : $2 \times 2 = 4$
(a) What is sub-culturing?
(b) Define continuous cell line.
(c) What do you mean by finite cell line?

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(Continued)

(3)

6. Answer any *one* from the following :
(a) Write a brief note on growth kinetics of cells in culture. Add a note on electrofusion. $6 + 4 = 10$
(b) Write notes on the following : $5 \times 2 = 10$
(i) PEG mediated cell fusion
(ii) Organ culture techniques

UNIT—IV

7. Answer any *two* from the following : $2 \times 2 = 4$
(a) Define transfection.
(b) Write about selectable marker.
(c) What is lipofection?
8. Answer any *one* from the following :
(a) What do you mean by microinjection? Discuss the procedure of microinjection. Add a note on electroporation. $1 + 5 + 4 = 10$
(b) Write notes on the following : $5 \times 2 = 10$
(i) HAT selection
(ii) Gene inactivation technique

UNIT—V

9. Answer any *two* from the following : $2 \times 2 = 4$
(a) What do you mean by secondary metabolites?

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(Turn Over)

(4)

(b) What is polyclonal antibody?

(c) Write about factor VIII.

10. Answer any *one* from the following :

(a) Describe the production and applications of monoclonal antibodies.

6+4=10

(b) Write notes on the following :

5×2=10

(i) Insulin

(ii) Growth hormone

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