

TDC Even Semester Exam., 2019

BIOTECHNOLOGY
(Honours)

(2nd Semester)

Course No. : BTCH-202

(Cell Biology and Biological Techniques)

Full Marks : 35

Pass Marks : 12

Time : 2 hours

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

1. (a) What is pre-cellular evolution? 2
(b) Write a brief note on the experiment by Stanley Miller and Harold Urey. 5

OR

2. (a) Differentiate between eukaryotic and prokaryotic cells. 3
(b) Write short notes on the following : $2 \times 2 = 4$
(i) Mitochondria
(ii) Chloroplasts

3. (a) What is ecological amplitude? 1
(b) Briefly illustrate the ecological amplitude of cells in arid and brackish water environment. $3+3=6$

OR

4. (a) What is cell cycle? Give its different phases. $1+2=3$
(b) Give the salient features of cell cycle disruption in cancer. 4

5. (a) Write a note on cell differentiation. 3
(b) What are different types of cell-cell interaction in a biological system? 4

OR

6. (a) Give the ultrastructure of the plasma membrane of a cell. 4
(b) What is programmed cell death? 3
7. (a) Write short notes on the following : $3 \times 2 = 6$
(i) CT Scan
(ii) NMR
(b) Give an application of ultrasound imaging. 1

(3)

OR

8. (a) State Beer-Lambert law. 2
- (b) Write down the principle and applications of atomic absorption spectroscopy. 5
9. (a) What is fluorometry? Give its applications. 1+3=4
- (b) How is fluorometry different from colorimetry? 3

OR

10. (a) Differentiate between light microscopy and electron microscopy. 4
- (b) Give a flow diagram of the working of a transmission electron microscope. 3
