

**2024/FYUG/ODD/SEM/
BTCDDSC-101T/238**

FYUG Odd Semester Exam., 2024

BIOTECHNOLOGY

(1st Semester)

Course No. : BTCDDSC-101T

(Cell Biology)

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 of the following : 2×2=4

- (a) Write a note on prokaryotic cell.
- (b) Define cytosol.
- (c) What do you mean by motile cell?

2. Answer any one of the following :

- (a) Define cell theory. Describe the structure of a eukaryotic cell. Add a note on cytoplasm. 2+6+2=10

(2)

(b) Write notes on : $5 \times 2 = 10$

- (i) Structure and function of cilia and flagella
- (ii) Structure and function of microfilaments and microtubules

UNIT—II

3. Answer any *two* of the following : $2 \times 2 = 4$

- (a) Why mitochondria is known as the powerhouse of a cell?
- (b) Define peroxisomes.
- (c) Write a note on vacuole.

4. Answer any *one* of the following :

- (a) Describe the structure and function of endoplasmic reticulum. Add a note on golgi complex. $6 + 4 = 10$
- (b) Write notes on : $5 \times 2 = 10$
 - (i) Structure and functions chloroplast
 - (ii) Structure and functions of ribosome

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(3)

UNIT—III

5. Answer any *two* of the following : $2 \times 2 = 4$

- (a) What is the function of plasma membrane?
- (b) Define facilitated diffusion.
- (c) What is cell recognition?

6. Answer any *one* of the following :

- (a) Describe the structure and function of nucleus. Add a note on osmosis. $7 + 3 = 10$
- (b) Write notes on : $5 \times 2 = 10$
 - (i) Fluid mosaic model
 - (ii) Membrane transport

UNIT—IV

7. Answer any *two* of the following : $2 \times 2 = 4$

- (a) What is cell cycle checkpoint?
- (b) Define programmed cell death.
- (c) Write a note on nucleic acid.

8. Answer any *one* of the following :

- (a) Diagrammatically explain the double helical structure of DNA. Write down the physical and chemical properties of DNA. Add a note on functions of DNA. $5 + 3 + 2 = 10$

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(Turn Over)

(4)

- (b) Write notes on : 5×2=10
- (i) Cell cycle
 - (ii) Meiosis

UNIT—V

9. Answer any *two* from the following : 2×2=4
- (a) What is integrin?
 - (b) Write down the characteristics of cancer.
 - (c) Define carcinogen.
10. Answer any *one* of the following :
- (a) What is cell adhesion molecule? Write a detailed account on structure and function of extracellular matrix. 4+6=10
 - (b) Write notes on : 5×2=10
 - (i) Molecular basis of cancer
 - (ii) Agents promoting carcinogenesis

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