

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

**FYUG Odd Semester Exam., 2024**

**BIOTECHNOLOGY**

**( 1st Semester )**

**Course No. : BTCDCS-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

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(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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### 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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(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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