

**2024/FYUG/EVEN/SEM/
BTCDSM-151T/107**

FYUG Even Semester Exam., 2024

BIOTECHNOLOGY

(2nd Semester)

Course No. : BTCDSM-151T

(Cell Biology and Biochemistry)

Full Marks : 70

Pass Marks : 28

Time : 3 hours

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

SECTION--A

Answer any ten of the following questions :

2×10=20

1. Write about cell theory.
2. Differentiate between active transport and passive transport.
3. Write a note on components of biological membrane.

(2)

4. Differentiate between mitochondria and chloroplasts.

5. Write a note on cytosol.

6. Point out the functions of endoplasmic reticulum.

7. How do purines differ from pyrimidines?

8. Differentiate between nucleoside and nucleotide.

9. Write a note on oncogenes.

10. Point out the properties of amino acids.

11. Write a note on primary structure of proteins.

12. Write about chemical properties of proteins.

13. Define cofactors.

14. Write a note on prosthetic groups.

15. Write about activation energy.

243/1135

(Continued)

(3)

SECTION—B

Answer any five of the following questions :

10×5=50

16. Give a detailed account of the ultrastructure of a prokaryotic cell. Differentiate between prokaryotic cell and eukaryotic cell. 6+4=10

17. Define cell membrane. Describe fluid mosaic model of cell membrane with the help of a suitable diagram. Point out the functions of cell membrane. 2+6+2=10

18. Write about the features of vacuoles. Describe cytoskeleton in detail. 4+6=10

19. Give a detailed account of lysosomes. Add a note on peroxisomes. 6+4=10

20. Mention the chemical properties of nucleic acids. Give a detailed account of double helical model of DNA. 3+7=10

21. Define cell cycle checkpoints. Give an account of programmed cell death. Add a note on carcinogenesis. 2+5+3=10

22. Give an illustrated account of secondary structure of proteins. Add a note on basic structure of amino acids. 6+4=10

243/1135

(Turn Over)

23. Give an account of structure, properties and functions of monosaccharides. 5+3+2
24. Give an illustrated account of TCA cycle. Differentiate between glycolysis and TCA cycle. 7+3
25. Write notes on the following : 5+5
- (a) Nomenclature and classification of enzymes
 - (b) Factors affecting enzyme activity
