

FIRST SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2015

(CUCBCSS-UG)

Core Course – Biotechnology

BTY 1B 01— CELL BIOLOGY

Time : Three Hours

Maximum : 80 Marks

Section A

*Answer any two out of four questions in about 1,500 words.**Each question carries 10 marks.*

1. Write an essay on different types of membrane transport.
2. Describe the steps involved in cell signaling and name the path ways involved in signal transduction.
3. Define Cancer. What are the causes of **carcinogenesis** and explain the structural and functional characteristics of **cancerous** cells.
4. Describe Cyclic and Non-cyclic **photophosphorylation**.

(2 x 10 = 20 marks)

Section B

*Answer any seven out of fourteen questions in about 750 words.**Each question carries 5 marks.*

5. Discuss **protobiont** and the RNA world hypothesis.
6. Describe the functions of each cell organelles in **eukaryotes**.
7. Explain the ultra structure and chemical composition of plasma membrane of animal cell.
8. Describe the structure and functions of plant cell wall.
9. Explain various functions of **Golgi** complex.
10. Explain **chemi-osmotic** theory of ATP synthesis.
11. Describe the methods for transport of large molecules through plasma membrane.
12. Describe the structure of bacterial cell wall.
13. Give an account on various **microbodies** present in the cell.
14. Discuss the protein sorting and vesicular traffic from **endoplasmic reticulum** to **Golgi**.

Turn over

15. Explain fluid mosaic model of plasma membrane.
16. Describe electron transport system.
17. Discuss the different check points in cell cycle and explain how they regulate.
18. Explain extrinsic pathway of apoptosis.

(7 x 5 = 35 marks)

Section C

Answer all questions in about 300 words.

Each question carries 3 marks.

19. Write a note on mitochondrial DNA.
20. Explain the cell division in prokaryotes.
21. Give an account on extracellular matrix.
22. Give an idea on origin and evolution of cells.
23. Explain significance of Mitosis.

(5 x 3 = 15 marks)

Section D

Answer all questions in about 200 words.

Each question carries 2 marks.

24. Distinguish apoptosis and necrosis.
25. Chromoplast.
26. P⁵³.
27. Distinguish heterochromatin and Euchromatin.
28. Polyribosomes.

(5 x 2 = 10 marks)