

D 74377

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Name.....

Reg. No.....

FIRST SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2014

(CUCBCSS-U.G.)

Core Course—Biotechnology

BT 1B 01—CELL BIOLOGY

Time : Three Hours

Maximum : 80 Marks

Section A

Answer any *two* out of *four* questions each in about 1500 words each. Each question carries 10 marks.

1. Explain the structure and function of plasma membrane.
2. What is **apoptosis** ? Distinguish **apoptosis** and necrosis. Explain intrinsic pathway of **apoptosis**.
3. What are different phases of **cellcycle** ? How **cyclins** and **CDKS** regulate **cellcycle** ?
4. What is vesicular transport ? Explain secretory and **endocytic** pathways.

(2 x 10 = 20 marks)

Section B

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

5. Write a brief account on **cytoskeletal** elements.
6. What are second messengers ? Explain their functions.
7. Explain the structure and function of cilia and **flagella**.
8. What are stem cells ? Discuss the application of **embryonic** stem cells.
9. Distinguish aerobic and anaerobic respiration.
10. Explain any five milestones in **cellbiology**.
11. Describe how plant cell differ from animal cell ?
12. Write short note on **glycoprotein** and lipoprotein.
13. Write short note on extrinsic and intrinsic protein.
14. Discuss evolutionary origin of mitochondrion.
15. Explain various functions of **endoplasmic reticulum**.

Turn over

16. Describe four kinds of molecules involved in cell adhesion.
17. What is **synaptonemal** complex ? Explain its significance in meiosis.
18. What are plastids ? Describe different types of plastids.

(7 x 5 = 35 marks)

### Section C

Answer *all* questions in about 300 words each. Each question carries 3 marks.

19. Explain cyclic **photophosphorylation**.
20. **Ribosomes** are described as protein factories of the cell. Explain.
21. Discuss different types of chromatin.
22. What is **MPF** ? Explain the structure and function of **MPF**.
23. Define gap junctions and tight junctions. Give their structure.

(5 x 3 =15 marks)

### Section D

Answer *all* questions each in about 200 words. Each question carries 2 marks.

24. What are **peroxisomes** ?
25. What is **RUBISCO** ?
26. **Cdk** inhibitors.
27. Nitric Oxide.
28. **Calmodulin**.

(5 x 2 =10 marks)