

**D 52740**

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Name.....

Reg. No.....

**FIRST SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

(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. What are the different stages that make up mitosis ? What are the main events of each stage ?
2. What are mitochondria ? What is the basic morphology of these organelles and in which cells can they be found ?
3. Write a note on stem cells and the uses of stem cells in medicine.
4. What is the Miller -Urey experiment ? What is its significance ?

(2 × 10 = 20 marks)

**Section B**

*Answer any seven out of fourteen questions in about 750 words.*

*Each question carries 5 marks.*

5. What are the main structures within the nucleus of a cell ?
6. What is the function of lysosomes ?
7. What is the endosymbiotic hypothesis regarding the origin of chloroplasts and mitochondria ?
8. What are the main components of the cytoskeleton ?
9. What are the two main types of endocytosis ?
10. What are cilia and flagella ? How do these structures produce movements ?
11. How are proteins synthesized in cells ?
12. Where does photolysis of water occur ? What is its purpose ?
13. What is the role of the Golgi apparatus in vesicular trafficking ?
14. What is the structure of chromatin ?

**Turn over**

15. How do cells recognize signals ?
16. What are the types of enzymes present in peroxisomes ?
17. What is cell adhesion ? How is it achieved ?
18. What are the three types of cell junctions between cells ?

(7 × 5 = 35 marks)

### Section C

*Answer all questions in about 300 words.*

*Each question carries 3 marks.*

19. What are the main respective components of cell-walls in bacteria, protists, fungi and plants ?
20. What are the three stages of interphase ?
21. Which type of cell evolved first, the eukaryotic or the prokaryotic cell ?
22. What is the purpose of apoptosis ?
23. What are plasmodesmata ?

(5 × 3 = 15 marks)

### Section D

*Answer all questions in about 200 words.*

*Each question carries 2 marks.*

24. What is "Cell theory" ?
25. Are there living organisms without cells ?
26. How are membranes classified according to their permeability ?
27. What is the function of the plasma membrane ?
28. What is the tonoplast ?

(5 × 2 = 10 marks)