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FIRST SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2017

(CUCBCSS-UG)

Biotechnology

BTY 1B 01—CELL BIOLOGY

Time: Three Hours

Maximum: 80 Marks

Section A

Answer any two out of four questions in 1500 words each.

Each question carries 10 marks.

- 1. Explain protein synthesis, with neat diagrams.
- 2. Explain cell biology of fertilization.
- 3. Explain the cell cycle.
- 4. Explain the Molecular organization and functional role of the Mitotic oapparatus.

 $(2 \times 10 = 20 \text{ marks})$

Section B

Answer any seven out of fourteen questions in 750 words.

Each question carries 5 marks.

- 5. Explain the events in Meiosis.
- 6. Discuss the organization of the heterochromatin.
- 7. Write briefly on viruses as oncogenic agents.
- 8. Write briefly on cytoplasmic streaming (cyclosis) observed in large plant cells.
- 9. Explain ion transport machinery in red cells.
- 10. Compare the cell organization in prokaryotes and eukaryotes.
- 11. Bell and spot desmosomes in mechanical adhesion.
- 12. Explain the immotile cilia syndrome.
- 13. Explain the different animal cell communication mechanisms.
- 14. Discuss the Golgi complex and its functions.
- 15. Detail the mechanism of cell signaling in in animal cells.
- 16. Detail the mitochondrial ATP pump and its working.

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- 17. What are Cancer cells? How are they structurally and biochemically different from normal cells?
- 18. Explain the biogenesis of the mitochondria.

 $(7 \times 5 = 35 \text{ marks})$

Section C

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

- 19. Differentiate between prokaryotic and eukaryotic ribosomes.
- 20. Explain the lymphokines, nerve growth factors and platelet derived growth factors and their functions.
- 21. Write briefly on telomeres and telomerases.
- 22. Write a note on hematopoietic item cells.
- 23. Explain Cytokinesis in plant cells.

 $(5 \times 3 = 15 \text{ marks})$

Section D

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

- 24. Central dogma of molecular biology.
- 25. Watson-Crick DNA double helic.
- 26. Normal human karyotype-characteristics.
- 27. Euploidy and Aneuploidy.
- 28. Diakinesis.

 $(5 \times 2 = 10 \text{ marks})$