

**D 71618**

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Name.....

Reg. No.....

**THIRD SEMESTER B.A./B.Sc. DEGREE EXAMINATION, NOVEMBER 2019**

(CUCBCSS—UG)

Biotechnology

BTY 3B 03—BIOCHEMISTRY

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. Explain the sequence of reactions that lead to formation of ethanol from glucose in yeast.
2. Discuss the physical and chemical properties of amino acids.
3. Draw the structure of DNA double helix and explain its salient characteristics. Also add a note on different forms of DNA.
4. Discuss the effect of substrate concentration and inhibitors on velocity of enzyme catalyzed reaction.

(2 × 10 = 20 marks)

**Section B**

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

*Each question carries 5 marks.*

5. Explain covalent catalysis and acid base catalysis with suitable examples.
6. Explain Cori cycle and substantiate its importance.
7. Explain the mechanism of oxidative phosphorylation.
8. Discuss the different types of weak interactions in biological systems.
9. Describe the sequence of reactions in urea cycle.
10. Discuss the functions of vitamin C and Vitamin D.
11. What are the important functions of thyroxin and insulin,
12. How are enzymes classified ? Explain with suitable examples.
13. Outline the synthesis of palmitic acid from acetyl coenzyme A.
14. What is the principle of gel filtration ? How is it carried out ? What are its applications ?

**Turn over**

15. Rapidly growing tissues and tissues carrying out active biosynthesis of fatty acids and steroid hormones have a high demand for pentose phosphate pathway. Explain.
16. Discuss the structure of collagen.
17. Outline the principle and procedure of TLC.
18. Explain the principle and applications of SDS-PAGE

(7 × 5 = 35 marks)

### Section C

*Answer all questions in 300 words.*

*Each question carries 3 marks.*

19. Principle of affinity chromatography.
20. Structure and functions of starch.
21. Metabolism of glycine.
22. Classification of lipids.
23. Nucleic acid bases

(5 × 3 = 15 marks)

### Section D

*Answer all questions in about 200 words.*

*Each question carries 2 marks.*

24. Principle of ion exchange chromatography.
25. Physiological functions and deficiency disorder of vitamin A.
26. Titration curve of alanine.
27. How is fructose metabolized in liver ?
28. Explain the role played by abscisic acid in plants under water stress.

(5 × 2 = 10 marks)