

M. Sc. DEGREE EXAMINATION, NOVEMBER - 2017  
BIOINFORMATICS  
FIRST SEMESTER

COURSE : CORE  
PAPER : BIOCHEMISTRY  
TIME : 3 HOURS

MAX. MARKS: 100

SECTION – A

ANSWER ALL QUESTIONS:

(20X1=20)

1. What are Biomolecules? Give examples.
2. What is a Biosystem?
3. Draw the Chemical and Molecular structure of water.
4. What are amphoteric substances?
5. What are the pentoses that occur in the HMP Shunt?
6. Differentiate between uricotelic and ureotelic animals.
7. Define xenobiotic.
8. Why, one form of oxidation of fatty acids is specifically called  $\beta$ - Oxidation of fatty acids?
9. What is a polypeptide?
10. Give one difference between  $\alpha$  and  $\beta$  helix.
11. Name the purine and pyrimidine bases.
12. Define a peptide bond.
13. What are Biocatalysts?
14. What are Allosteric enzymes?
15. Define feedback inhibition.
16. State any two drawbacks in Lineweaver-Burks Plot.
17. Define free energy.
18. Give the structure of Tryptophan.
19. Define Entropy.
20. What is  $K_{eq}$ ?

SECTION- B

ANSWER ANY FOUR QUESTIONS

(4X10=40)

21. Elaborate on the importance of water in biosystems.
22. What are the methods by which amino acids are degraded in our system?
23. Explain the four levels of protein structure.
24. Write a note on the Ramachandran Plot in relation to the conformation of protein.
25. Elucidate on the mechanism of enzyme action.
26. Explain allosteric Modulation.
27. ATP, is the “Energy Currency” of the cell. Explain.

SECTION – C

ANSWER ANY TWO QUESTIONS

(2X20=40)

28. Explain the Respiratory Chain with illustrations
29. Write notes on: a) Michaelis-Menten Equation, b) Types of Inhibitions. (10+10)
30. Enumerate the steps in Glycolysis and TCA Cycle. (10+10)
31. Answer the following: a) Draw a neat labelled structure of the DNA,  
b) Classify Carbohydrates.

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