



V Semester B.Sc. Examination, November/December 2018  
(Freshers + Repeaters) (CBCS) (2016 – 17 and Onwards)  
BIOCHEMISTRY (Paper – V)

Time : 3 Hours

Max. Marks : 70

- Instructions :** i) The question paper has **two** Parts : Part – A and Part – B.  
ii) Answer **any eight** questions from Part – A and **nine** questions from Part – B.

PART – A

Answer **any eight** of the following questions. **Each** question carries **two** marks. (8×2 = 16)

1. What are monosaccharides ? Give example.
2. Write the structure of Isomaltose.
3. What are sugar acids ? Give an example.
4. Write any two importance of phospholipids.
5. What is estrogen ? Give any two functions.
6. What is ceramide ? Give its structure.
7. Write any two biological importance of Oxytocin.
8. Mention the use of Edman's reagent.
9. What is Zwitter ion ? Write the Zwitter ion structure of Glycine.
10. Write the equation relating standard free energy change and equilibrium constant.
11. What is redox reaction ? Give an example.
12. Write the structure of NAD<sup>+</sup>.





## PART – B

Answer **any nine** of the following questions. **Each** question carries **six** marks.

(9×6= 54)

13. a) Explain the elucidation of open chain structure of glucose.  
b) Write the structure of ribose-5-phosphate. Give its biological importance. (4+2)
14. a) Name any two heteropolysaccharides. Mention their biological importance.  
b) Name the storage polysaccharides in plants and animals. (4+2)
15. a) Explain the biological importance of carbohydrates.  
b) What are glycoproteins ? Give its functions. (4+2)
16. a) Why is ATP energy currency of cell ? Explain.  
b) Write the structure of any cardioglycoside. (4+2)
17. a) What are phosphoglycerides ? Give the structure and biological role of phosphatidyl ethanolamine.  
b) Define Iodine number. Give its significance. (4+2)
18. a) What are Prostaglandins ? Give their biological importance.  
b) What are micelles ? How are they formed ? (4+2)
19. a) How are lipoproteins classified ? Mention their clinical significance.  
b) Write any two functions of cholic acid. (4+2)
20. a) How does an amino acid reacts with FDNB and Edman reagent ?  
b) What is peptide bond ? How is it formed ? (4+2)
21. a) Explain the Anfinsen's experiment.  
b) Give the biological functions of vasopressin. (4+2)
22. a) Mention the types of secondary structure of proteins and describe any one of them.  
b) Explain the denaturation of proteins. (4+2)





23. a) Calculate the standard free energy change of the following redox reaction.



Given :

- i)  $E^{\circ}$  of  $\text{NAD}^+/\text{NADH} = 0.32 \text{ V}$
- ii)  $E^{\circ}$  of  $\text{Pyruvate}/\text{Lactate} = 0.19 \text{ V}$
- iii)  $F = 23.06 \text{ KCal mol}^{-1}$

b) What are exergonic reactions ? Give an example. (4+2)

24. a) Explain Oxidative phosphorylation.

b) Mention the role of coenzyme Q in ETC. (4+2)

25. a) What are high energy compounds ? Give three examples.

b) State the first and second law of thermodynamics. (4+2)

