

**GS-308**

VI Semester B.Sc. Examination, May/June - 2019

CHEMISTRY**Biochemistry-VIII****(CBCS) (F+R) (2016-17 & Onwards)**

Time : 3 Hours

Max. Marks : 70

- Instructions :** (1) The question paper has **two** parts, Answer both the parts.
(2) Write equations and diagrams wherever necessary.

PART - A

Answer **any eight** of the following questions. Each question carries **two** marks. **8x2=16**

1. Mention the contribution of the following scientists to the development of biochemistry :
 - (a) Han's Krebs
 - (b) Fredric Sanger
2. Write the Zwitter ionic structural form of glycine.
3. Define Michaelis - Menten constant. Mention its significance.
4. Write Haworth structure of B-D-galactosamine.
5. What is energy Coupling ? Give an example.
6. Mention any two termination codons.
7. Define saponification number of lipids give its significance.
8. Write the reaction of urea cycle catalysed by arginase.
9. Explain competitive inhibition, with an example.
10. What are nucleotides ? Give an example.
11. Write the structure of alanyl serine.
12. Name the forces which stabilises tertiary structure of proteins.

P.T.O.



PART - B

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

13. (a) Write the principle and applications of thin layer chromatography. **9x6=54**
(b) Write any two biological role of water. **4+2**
14. (a) Write the partial structure of glycogen, give its biological importance. **4+2**
How does it differ from starch ?
(b) Give any two biological role of Chitin.
15. (a) What are fatty acids ? Give their classification with one example in **4+2**
each class.
(b) Define liposomes. Give any two applications of it.
16. (a) What are hormones ? Give the biological functions of. **4+2**
(i) Glucagon
(ii) Oxytocin
(iii) Progesterone
(b) Write a note on denaturation of proteins.
17. (a) How are amino acid classified based on polarity of side chain ? Give **4+2**
one example for each class.
(b) Write a note on Primary structure of protein.
18. (a) (i) Name two aromatic amino acids. **2+2+2**
(ii) Name two hydroxyl group containing amino acids.
(b) Define Isoelectric pH. Write the ionic forms of alanine at $\text{pH}_{4.1}$.
(c) How do amino acids reacts with alcohol ?
19. Write note on the following. **2+2+2**
(a) Koshland's induced fit theory of enzyme catalysis.
(b) Effect of temperature on enzyme catalysed reaction.
(c) Active site of an enzyme.
20. (a) Calculate the number of ATP molecules produced by the oxidation of **4+2**
acetyl CoA in TCA cycle.
(b) Write equation for the conversion of fumarate to malate.



21. (a) Describe the role of carnitine in the metabolism of fatty acid. 2+2+2
(b) How is pyruvate converted in to ethanol in yeast ?
(c) Write the reaction of glycolytic path way catalysed by Aldolase.
22. (a) Why is ATP the most efficient energy molecule ? Illustrate with 4+2
structure.
(b) What is substrate level phosphorylation ? Give an example.
23. (a) Explain semiconservative mechanism of DNA replication. 4+2
(b) What is translation ?
24. (a) Mention four salient features of Watson and Crick model of DNA. 4+2
(b) Describe Chargaff's rule of base equivalence.
25. (a) Write a note on Chromatin. 2+2+2
(b) What is transamination ? Give an example.
(c) Write any two applications of DNA finger printing.

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