QP CODE: 22001479

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Reg No : .....

Name : .....

M Sc DEGREE (CSS) EXAMINATION, JULY 2022

First Semester

M Sc ZOOLOGY

CORE - ZL010103 - BIOCHEMISTRY

2019 ADMISSION ONWARDS

74F2F2F4

Time: 3 Hours

Weightage: 30

Part A (Short Answer Questions)

*Answer any **eight** questions.*

*Weight **1** each.*

1. What is the role of Hexokinase in Glycolysis? Comment on the importance of Hexokinase catalyzed step in cells.
2. Give an brief account on Glycogen storage diseases
3. Explain briefly what happens when an egg is boiled.
4. How is ammonia transported through blood to ithe site of urea cycle?
5. What is iodine number?
6. Explain the process of entry of long chain fatty acids into mitochondia.
7. What is Writhing Number
8. Explain Cys2/His2 finger
9. Distinguish between coenzyme and ribozyme.
10. Distnguish betwen Lock and Key theory and Induced fit theory.

(8×1=8 weightage)

Part B (Short Essay/Problems)

*Answer any **six** questions.*

*Weight **2** each.*

11. Explain oxidative and substrate level phosphorylation with examples
12. Comment on the hormonal control of glycogen metabolism by insulin and glucagon.

13. Describe the titration curve of glycine and compare it with the titration curve of an acidic R group containing amino acid.

14. Elucidate the pathways by which several aminoacids enter the Krebs cycle through the intermediate succinyl co-enzyme A.

15. Discuss the structure of cholesterol. Mention about its clinical significance.

16. Write an account of free radicals and its harmful effects.

17. Explain catabolism of pyrimidines.

18. Give an account of allosteric regulations.

(6×2=12 weightage)

Part C (Essay Type Questions)

*Answer any **two** questions.*

*Weight **5** each.*

19. Write an essay on polysaccharides, elucidating its structural and functional role in biological systems .

20. Most protein structures are determined by X-ray crystallography or Nuclaer Magnetic Resonance (NMR). Describe in detail about the higher order structural variants of proteins.

21. Elucidate the structure and role of compound lipids using suitable examples.

22.
1. An enzyme catalysed reaction has a k_m of 1mM and a V_{max} of 5 nM /s. What is the reaction velocity when the substrate concentration is (a) 0.25mM and (b) 1.5mM respectively?
2. Plot the Double-reciprocal graph for the following data for an enzyme and determine its k_m and V_{max} .

[S] (mM)	v_0 (mM / sec)
1	2
2	4
5	6
10	8
20	10

(2×5=10 weightage)