

B.Sc. Semester III (Honours) Examination, 2018-19**ZOOLOGY****Course ID : 32613****Course Code : SHZOO-303C-7(T)****Course Title : Fundamental of Biochemistry****Time: 1 Hour 15 Minutes****Full Marks: 25***The figures in the margin indicate full marks.**Candidates are required to give their answers in their own words as far as practicable.*

1. Answer *any five* questions: 1×5=5
- (a) What is ribozyme?
- (b) What is anomer?
- (c) What is substrate level phosphorylation?
- (d) Give one example each of glucogenic and ketogenic amino acids. ½+½=1
- (e) Give example of one immunologically active protein containing disulphide bridge.
- (f) Why phospholipids in the plasma membrane exhibit amphipathic character.
- (g) Draw the structure of one aromatic amino acid.
- (h) What is sphingolipid?
2. Answer *any two* of the following: 5×2=10
- (a) A DNA molecule has A/T base ratio of 0.30, $\frac{G}{C}$ ratio of 2.5 and $\frac{A+T}{G+C}$ ratio of 1.30. What is the $\frac{A+G}{T+C}$ ratio in the molecule?
- A DNA segment contains 100 nucleotide base pairs.
- (i) What is the length of DNA segment?
- (ii) Calculate the number of spirals in the molecule.
- (iii) There is a total of 70 Adenine bases. Calculate the number of Guanine present in the segment. 2+(1+1+1)=5
- (b) What is gluconeogenesis? What are the three essential steps that differs from glycolysis? ½+4½=5
- (c) Describe the process of oxidative and non-oxidative deamination with suitable examples. State the significance of pentose phosphate pathway. 4+1=5
- (d) Briefly describe the Lineweaver-Burk plot during enzyme action? What is the unit of Km? 4+1=5

3. Answer *any one* question:

10×1=10

- (a) Describe the electron transport system in mitochondria. Name one inhibitor of electron transport. Mention the end product of Krebs' s cycle. 8+1+1=10
- (b) Differentiate between Saturated and Unsaturated fatty acids. Give one example of each type. Write the steps of reaction of the breakdown of palmitic acid by β -oxidation. Calculate the net yield of ATP in the above process. 1+1+6+2=10
