



**WEST BENGAL STATE UNIVERSITY**  
B.Sc. Honours 3rd Semester Examination, 2021-22

**ZOOACOR07T-ZOOLOGY (CC7)**

**BIOCHEMISTRY**

Time Allotted: 2 Hours

Full Marks: 40

*The figures in the margin indicate full marks.  
Candidates should answer in their own words and adhere to the word limit as practicable.  
All symbols are of usual significance.*

1. Answer any **eight** questions from the following: 2×8 = 16
  - (a) What are ketone bodies?
  - (b) What is  $pK_a$  of water?
  - (c) What is Z-DNA?
  - (d) What is Chargaff's rule?
  - (e) What is coenzyme?
  - (f) Define isoelectric point of an amino acid.
  - (g) Draw the chemical structure of a disaccharide.
  - (h) What are the functions of TCA cycle?
  - (i) What are miRNA and siRNA?
  - (j) Name two buffers in living system.
  - (k) Name one non-polar amino acid and one sulphur containing amino acid.
  - (l) Draw basic structure of a nucleotide.
  
2. Answer any **three** questions from the following: 3×3 = 9
  - (a) Describe the urea cycle with a flowchart.
  - (b) Describe the pentose phosphate pathway with a flowchart.
  - (c) Why is thermogenin called an uncoupler?
  - (d) Write a short note on different factors affecting enzyme action.
  - (e) Write a short note on Lineweaver-Burk plot.
  
3. Answer any **three** questions from the following: 5×3 = 15
  - (a) Describe the steps of  $\beta$ -oxidation of a saturated fatty acid molecule.
  - (b) Describe the steps of oxidative phosphorylation with a short note on its biological significance.
  - (c) Derive Michaelis-Menten equation.
  - (d) Write short notes on transamination and deamination. 2½ + 2½
  - (e) Write down the steps of gluconeogenesis. What is reducing sugar? 4+1

**N.B. :** *Students have to complete submission of their Answer Scripts through E-mail / Whatsapp to their own respective colleges on the same day / date of examination within 1 hour after end of exam. University / College authorities will not be held responsible for wrong submission (at in proper address). Students are strongly advised not to submit multiple copies of the same answer script.*

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