

2023
M.Sc.
Second Semester
CORE – 06
ZOOLOGY
Course Code: MZOC 2.21
(Biochemistry)

Total Mark: 70
Time: 3 hours

Pass Mark: 28

Answer five questions, taking one from each unit.

UNIT-I

1. (a) Explain the concept of Bronsted Lowry acid and base. Add a note on strong and weak acid with suitable example. 5+4=9
(b) A buffer solution containing 0.20 mol dm^{-3} (per litre) of acetic acid and 0.30 mol dm^{-3} of sodium acetate. Calculate its pH? (K_a for acetic acid is $1.74 \times 10^{-5} \text{ mol dm}^{-3}$). 5
2. (a) Explain the redox reaction with suitable example. 6
(b) Give an account on photosystem I and II. 4+4=8

UNIT-II

3. Describe the pathway of gluconeogenesis. What are the major substrates of gluconeogenesis? 10+4=14
4. Describe the pathway and regulation of glycolysis. 9+5=14

UNIT-III

5. Explain how amino acids are classified based on polarity and metabolic fate. Write a note on biochemistry of peptides. 8+6=14
6. Write notes on the following: 7×2=14
 - (a) Haemoglobin
 - (b) Myoglobin

UNIT-IV

7. Explain the salvage biosynthetic pathway of purine and pyrimidine nucleotide. 7+7=14
8. Write notes on the following: 7×2=14
- (a) Amino acid pool
 - (b) Transamination

UNIT-V

9. Explain how metabolism of carbohydrate, protein, and lipid are coordinated and regulated. 14
10. Write notes on the following: 7×2=14
- (a) Metabolic alterations during starvation
 - (b) Intermediary metabolism
-