

April 2025
B.A./B.Sc.
Fourth Semester
CORE – 10
ZOOLOGY
Course Code: ZOC 4.31
(Biochemistry of Metabolic Processes)

Total Mark: 70

Pass Mark: 28

Time: 3 hours

Answer five questions, taking one from each unit.

UNIT-I

1. State three major differences between catabolism and anabolism.
Discuss the different stages of catabolism. 3+11=14
2. (a) Why is ATP considered as the energy currency of cell? Discuss. 7
(b) Enumerate on coupled reaction with example. 7

UNIT-II

3. With a neatly labelled diagram, explain the various steps and the enzymes involved in citric acid cycle. 14
4. Describe the steps and the key enzymes in gluconeogenesis. 14

UNIT-III

5. How are fatty acids degraded by omega-oxidation? Mention the significance of oxidation of fatty acid. 11+3=14
6. Describe the process of biosynthesis of triglycerides. 14

UNIT-IV

7. Mention the site of urea cycle. Explain urea cycle with the help of open chain structure. 2+12=14
8. Explain transamination and deamination with suitable examples. 7+7=14

UNIT-V

9. Discuss chemiosmotic theory. Why is redox reaction important for the biological system? 9+5=14
10. Explain the structure of the mitochondrial respiratory chain. Discuss the importance of coenzyme Q and cytochrome c in the mitochondrial respiratory chain. 10+4=14
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