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M. Sc. Examination, 2022  
Semester – I  
Biotechnology  
Core Course – II  
(Biochemistry)

Time: 3 hours

Full marks: 40

Questions are of value as indicated in the margin

Answer any *four* questions.

1. Describe the catabolic pathway for breakdown of purines in humans.  
10
2. Describe the forces that stabilize protein and nucleic acid structures.  
5+5=10
3. Describe the technique of sequencing proteins using the Edman degradation. During dansyl chloride treatment, why are several dansylated amino acids observed?  
6+4=10
4. Explain the urea cycle along with the enzymes involved. Discuss the short term regulation of the urea cycle. Briefly discuss two urea cycle disorders.  
5+2.5+2.5=10
5. Write short notes on:
  - a. Thermodynamically coupled reactions
  - b. Phenylketonuria
  - c. Laws of bioenergetics
  - d. Glucose alanine cycle2.5x4=10
6. What is meant by allosteric regulation of enzymes? Explain one type of allosteric regulation in detail. Discuss the different methods of enzyme inhibition.  
1+3+6=10