

B.Sc. T. Y. (CBCS Pattern) Semester-VI
**USBCDST-13 - Biochemistry Paper-I : Bioenergetics and Metabolism of Amino
Acids and Nucleotides**

P. Pages : 2

Time : Three Hours



GUG/W/24/13337

Max. Marks : 50

Note : All questions are compulsory and carry equal marks.

1. Give an account of high energy phosphate compounds. **10**

OR

- a) What is ATP-ADP cycle. **2½**
- b) Write a note on phosphate potential. **2½**
- c) Write a note on high energy thioesters. **2½**
- d) How we can determine the $\Delta G^{\circ'}$ for a reaction? **2½**

2. Discuss in detail the use of isotopic tracer technique in metabolic studies with advantages and limitations. **10**

OR

- a) What is Intermediary metabolism? Discuss with analysis of excretion. **2½**
- b) How is inhibitor used to study metabolism? **2½**
- c) Discuss the use of anti-metabolite for study of metabolism. **2½**
- d) Discuss the application of purified enzyme for metabolic study. **2½**

3. Give detailed account of mechanism of transamination. **10**

OR

- a) Write a note on Decarboxylation. **2½**
- b) Explain transmethylation with example. **2½**
- c) Draw flow-diagram of Urea cycle. **2½**
- d) Write a note on inherited defects of urea cycle. **2½**

4. Discuss the *De novo* synthesis of Purine nucleotide. 10

OR

- a) Write a note on regulation of pyrimidine synthesis. 2½
- b) Discuss catabolism of pyrimidine. 2½
- c) Write a note on gout. 2½
- d) Discuss Biosynthesis of deoxyribonucleotides from ribonucleotide. 2½

5. Attempt **any ten** from following. (1 mark for each) 10

- a) Define entropy.
- b) Define free energy.
- c) What is exergonic reaction?
- d) What are the advantages of studies with intact organisms?
- e) What is meant by organectomy?
- f) Give the example of two inhibitors used in metabolic studies.
- g) Name the amino acid which is used as a source of methyl group in transmethylation.
- h) What are ketogenic amino acid?
- i) Give the example of glycogenic amino acids.
- j) Draw the structure of pyrimidine ring.
- k) What is meant by denovo pathway?
- l) What is the full form of SCID?
