

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/S/23/13337

Max. Marks : 50

Notes : 1. All questions are compulsory and carry equal marks.

1. Write a note on following high energy phosphate compound. 10

- i) ATP
- ii) Phosphoenol pyruvate,
- iii) Creatine phosphate

OR

- a) What is Phosphate potential? 2½x4
=10
- b) Write a note Free energy of hydrolysis of thioester.
- c) Discuss ATP – ADP cycle
- d) How can we determine the of ΔG° for a reaction?

2. Discuss the application of isotope tracer studies in metabolic studies with advantages and limitations. 10

OR

- a) How fractionate the whole cell organelle? 2½x4
=10
- b) Write a note on enzyme purification.
- c) What is Intermediary metabolism?
- d) How inhibitor is used to study metabolism?

3. Discuss in detail Urea Cycle 10

OR

- Write a note on, 2½x4
=10
- a) Transamination
 - b) Deamination
 - c) Decarboxylation,
 - d) Transmethylation

4. Discuss the De novo synthesis of IMP. 10

OR

- a) Write a note on regulation of pyrimidine synthesis. 2½x4
=10
- b) Discuss catabolism of Purine
- c) Write a note on Lesch-Nyhan syndrome
- d) Discuss Biosynthesis of deoxyribonucleotides from ribonucleotide.

5. Attempt **any ten** from following 1x10
=10

- a) Give the statement of second law of thermodynamics.
- b) Define Gibbs free energy
- c) Give one example of 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 enter in to carbohydrate pool via α - keto glutarate.
- h) What is phenylketonuria?
- i) Give the example of ketogenic amino acids which enter in to TCA cycle via pyruvate
- j) Give full form of SCID
- k) Give full form of HGPRT
- l) Name the key regulatory enzyme of purine biosynthesis.
