

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

P. Pages : 2

Time : Three Hours



GUG/S/25/13337

Max. Marks : 50

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

1. Discuss in detail high energy phosphate compound with examples. **10**

OR

a) Write a note on phosphoryl group transfers. **2½**

b) What is phosphate potential? **2½**

c) Write a note on chemical basis of high standard energy of hydrolysis of ATP. **2½**

d) Discuss ADP-ATP cycle. **2½**

2. Discuss in details isotopeacer studies. **10**

OR

a) How inhibitor used to study metabolism. **2½**

b) Discuss use of anti-metabolite for study of metabolism. **2½**

c) Discuss the application of purified enzyme for metabolic study. **2½**

d) Write a note on Intermediary metabolism in vivo studies. **2½**

3. Discuss in detail transamination and deamination with proper examples. **10**

OR

a) Draw Urea cycle & its connection to TCA cycle. **2½**

b) Explain decarboxylation with example. **2½**

c) Discuss metabolism of phenylalanine. **2½**

d) Write a note on inherited defects of urea cycle. **2½**

4. Discuss *de novo* synthesis of GMP. **10**

OR

a) Write a note on regulation of pyrimidine synthesis. **2½**

b) Discuss catabolism of purine. **2½**

- c) Write note on adenosine deaminase deficiency. 2½
- d) Discuss biosynthesis of deoxyribonucleotides from ribonucleotide. 2½

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

- a) Define free energy.
- b) Define entropy.
- c) What is redox potential.
- d) What is meant by organectomy.
- e) What are the advantages of studies with intact organisms?
- f) What is respiratory exchange?
- g) Name the amino acid which is used as a source of methyl group in transmethylation.
- h) What are glycogenic amino acids.
- i) Give the example of ketogenic amino acid.
- j) Draw the structure of pyrimidine ring and show the sources of C and N atoms.
- k) What is meant by denovo pathway?
- l) Name the regulatory enzyme of AMP biosynthesis from IMP.
