

Roll No:

B.Sc. Biochemistry
Semester-IV Examination-2022
Metabolism of Amino acids and Nucleotides (Core Course)
Paper Code: BBC CC-13

Time: 3 hour

Max Marks: 75

Please Note: Write your Roll No. at the top before answering the questions. Attempt all questions in continuation. Start answer of each question on a new page.

Question 1

Give appropriate answer of the following

(1X15=15)

- i) Aminopeptidase is an example of exopeptidase (**True or False**)
- ii) Maple syrup disease is failure to degrade aromatic amino acid (**True or False**)
- iii) Ammonia released via breakdown of amino acids in muscles travels to liver as
- iv) Krebs bicycle is a link between urea cycle and
- v) Oxidative deamination is carried out in.....
- vi) Amino acid..... is used for the synthesis of γ -aminobutyrate (GABA)
- vii) and are purely ketogenic amino acids
- viii) Carbamoyl phosphate synthetase-I is involved in biosynthesis of pyrimidines (**True or False**)
- ix) In resting muscle, the primary source of energy is free fatty acids (**True or False**)
- x) Dietary Nucleic acids are absorbed through intestine as
- xi) Protein digestion begins in the stomach. (**True or False**)
- xii) Adenosine Monophosphate, Vitamin B5 and amino acid cysteine are precursors for the biosynthesis of
- xiii) The concentration of β -hydroxy butyrate rapidly increases in the blood during prolonged fasting. (**True or False**)
- xiv) Vitamin B3 is the precursor for NAD and NADP (**True or False**)
- xv) Zymogens are highly active enzymes secreted by Pancreas (**True or False**)

Question 2

Explain any three of the following

(3X5=15)

- i. Intestinal uptake of amino acids
- ii. Glucose alanine cycle and its significance
- iii. Protein Calorie Malnutrition
- iv. Explain the regulation and common mutations in Urea cycle
- v. Steps involved in amino acid breakdown

Question 3

Give detailed account of any three of the following

(3X5=15)

- i. Phosphocreatine
- ii. Role of Tetrahydrofolate Cofactor in amino acid catabolism
- iii. Discuss Porphyria
- iv. Heme degradation
- v. Phenylketonuria

Question 4

Explain any one of the following

(1X15=15)

- i. Give detailed account of Purine Biosynthesis and its Regulation
OR
- ii. Discuss Thymine biosynthesis and explain why dUTP can't be directly converted to TTP and also comment on the significance of the pathway in Cancer treatment.

Question 5

Give detailed account of any three of the following

(3X5=15)

- i. Gout Disease
- ii. Purine Nucleotide Cycle and its significance
- iii. Metabolism in Muscles
- iv. Severe Combined Immunodeficiency Disease
- v. Briefly discuss concept of Integration of metabolism