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BCH 552

IV Semester M.Sc. Examination, September/October 2022

BIOCHEMISTRY

Metabolism of Nitrogen Containing Compounds

Time : 3 Hours

Max. Marks : 70

1. Answer **10** of the following : **(10×2=20)**

- a) What is nitrogen fixation ?
- b) What is cumulative feedback inhibition ? Give an example.
- c) Differentiate salvage and de novo pathway.
- d) What is negative nitrogen balance ?
- e) What is Lesch-Nyhan syndrome ?
- f) What are symbionts ?
- g) What is Gout ?
- h) Give the biological significance of chorismate.
- i) What is transamination reaction ? Give an example.
- j) What is porphyria ?
- k) Give the biological significance of serotonin and histamine.
- l) Differentiate nitrification and denitrification.

Answer **any five** of the following : **(5×10=50)**

2. a) Illustrate nitrogen fixation by the nitrogenase complex.
- b) Explain glucose-alanine cycle. **(5+5=10)**
3. a) Explain the biosynthetic pathway of methionine from aspartate.
- b) Outline the mechanism of action of tryptophan synthase. **(5+5=10)**

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4. a) Explain urea cycle and its significance.
b) Describe the steps involved in heme degradation. **(5+5=10)**
 5. a) Write a note on the de novo synthesis of purines.
b) Schemate the steps involved in the degradation of phenylalanine and tyrosine. **(5+5=10)**
 6. a) Outline the steps involved in the biosynthesis of heme.
b) Describe the degradation of pyrimidine nucleotides. **(5+5=10)**
 7. a) Discuss the role of PLP in amino acid catabolism.
b) Write a note on general regulation of amino acid metabolism. **(5+5=10)**
 8. a) Discuss the degradation of branched chain Isoleucine.
b) Explain the anabolic pathway of arginine. **(5+5=10)**
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