Reg. No. | | | | | | | | | |

BCH 503

III Semester M.Sc. Degree Examination, December 2018
(CBCS)
BIOCHEMISTRY
Metabolism of Nitrogen Containing Compounds

Time : 3 Hours Max. Marks : 70

Note : *Answer Part – **A** and **any five** questions from Part – **B**.*

PART – A

1. Answer **any ten** of the following. **(10×2=20)**
   a) Mention any four forms of nitrogen in the biosphere.
   b) Write the importance of flavodoxin in the nitrogen fixation.
   c) What are nodulins ? Mention their significance.
   d) Mention the significance of glutamate and glutamine pathway.
   e) Justify that flurodeoxyuridylate is potent antitumor agent.
   f) Mention the function of DHFR. Write its importance.
   g) Distinguish between transamination and oxidative deamination.
   h) Define alkaptonuria.
   i) Distinguish between uricotelic and ureotelic organisms.
   j) Mention the components of glutathione. Write its significance.
   k) Mention the function and significance of L-asparginase.
   l) Write the physiological significance of N-acetyl glutamate.

PART – B **(5×10=50)**

2. a) Discuss nitrogen cycle in biosphere.
   b) Outline briefly 'nif' genes and their products. **(5+5=10)**

3. a) Explain the mechanism of electron transfer in the reduction of nitrogen in nitrogen fixation.
   b) Discuss briefly the regulation of glutamine synthetase. **(5+5=10)**

4. a) Describe the regulation of pyrimidine biosynthesis.
   b) Explain purine-nucleotide cycle and its importance. **(5+5=10)**

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5. a) Discuss briefly the fate of amino group and carbon skeleton in amino acid catabolism.
   b) Write a brief note on polyamines and their physiological significance.

(5+5=10)

6. a) Give an account on degradation of purine nucleotides.
   b) Explain the synthesis of arginine from ornithine. **(5+5=10)**

7. a) Briefly describe the biochemical basis of i) Lesch-Nyhan syndrome ii) Gout.
   b) Explain the function of Adenosine Deaminase (ADA) and its deficiency.

(5+5=10)

8. a) Discuss briefly the cofactors involved in amino acid catabolism.
   b) Explain the degradation of histidine to α–ketoglutarate. **(5+5=10)**

9. a) Write a biref note on the degradation of porphyrins and their regulation.
   b) Give a brief account on hemoglobinopathies. **(5+5=10)**
