

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST 3 EXAMINATION- Dec. 2019

M.Sc. Biotechnology (1<sup>st</sup> Semester)

COURSE CODE: 18MS1BT113

MAX. MARKS: 35

COURSE NAME: Biochemistry and intermediary metabolism

COURSE CREDITS: 03

MAX. TIME: 2.0 Hrs

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*Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.*

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- Q1.** Define the biochemical pathway/target of following drugs. **(4 mark) (COV)**
- Sulphonamides
  - Chloroindole-carboxamides
  - Carnitine supplements
  - biotin supplements
- Q2.** Explain the free-energy change ( $\Delta G$ ) and spontaneous nature of biological reactions. What is the significance of coupled reactions? Justify your answer with suitable example. **(3 marks) (COI)**
- Q3.** Why glucose is not stored in its monomeric form in hepatocytes. Which molecule is stored in liver as reserve fuel? **(3 marks) (COII)**
- Q4.** Explain the process of purine nucleotide and also explain how synthetic inhibitors of purine synthesis may be utilized as anticancer molecule? **(5 marks) (COV)**
- Q5a.** What is the biological significance of amino acid deamination? **(2 marks) (COIV)**
- b.** Explain, how ammonia gets detoxified in liver and also define the role of different enzymes and their location in cells? **(3 marks) (COIV)**
- Q6.** Define the significance of following. **(15 marks) (COIII, COIV)**
- Malate-Aspartate Shuttle
  - Glycogen phosphorylase and its different forms
  - Pyruvate dehydrogenase