

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- Feb 2024

M.Tech.II Semester

COURSE CODE: 14M11BT215

MAX. MARKS: 15

COURSE NAME: Metabolic engineering

COURSE CREDITS: 03

MAX. TIME: 1.0 Hrs

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

- Q1.** Explain the fate of pyruvate a) in yeast b) in human during anaerobic conditions? (3 marks)
- Q2.** Calculate the direct net gain of number of ATP generated during glycolytic pathway as well as with NADH generated during the process. (3 marks)
- Q3.** How do you differentiate between primary and secondary metabolites? Which of the metabolite is usually expressed as the survival strategy of an organism? Justify your answer with suitable example. (3 marks)
- Q4.** Explain the significance of 'substrate channeling' and how different enzymatic reactions get benefited by this phenomenon. Justify your answer with suitable example. (3 marks)
- Q5.** Explain the following in brief. (3 marks)
- a) Metabolic versatility of Acetyl-CoA
 - b) Metabolic grids and their biological significance