Reg. No.										

Manipal Institute of Technology, Manipal

(A Constituent Institute of Manipal University)

INSPIRED BY LIFE

III SEMESTER B.TECH (BIOTECHNOLOGY)

END SEMESTER EXAMINATIONS, NOV/DEC 2015

SUBJECT: PROCESS BIOCHEMISTRY [BIO 2102]

REVISED CREDIT SYSTEM

Time: 3 Hours MAX. MARKS: 50

Instructions to Candidates:

- Answer **ALL** the questions.
- Missing data may be suitable assumed.

1A.	Explain the significance of Km and Vmax correlating with competitive and noncompetitive inhibitions. Add a note on general acid base catalysis and covalent catalysis.	4
1B.	Explain the relevance of hemiacetals and hemiketals. Describe the structure of homopolysaccharides with their biomedical importance.	4
1C.	Explain the supra quaternary structure of protein.	2
2A.	Explain the biological activities of prostaglandins, thromboxanes and leukotrienes. Also explain their involvement in signal transduction.	4
2B.	Which is the rate limiting step in glycolysis and explain the fate of pyruvate in cytosol as well as in mitochondria.	4
2C.	What is the physiologic concentration of glucose? Mention any one test for glucose.	2
3A.	Give an overview of catabolism of amino acid in mammals. Explain the synthesis of cysteine and glutamate.	4
3B.	Elucidate the reactions of urea cycle in mitochondria and cytosol. What is the significance of carbamoyl phosphate in overall metabolism.	4
3C.	Give examples for zwitterion and zwitter ionic alcohol	2
4A.	What are the possible conformations of nucleotides in DNA. Explain the synthesis of purine in cellular environment also source of individual atoms in purine.	4
4B.	What are TGs? Explain. Compare and contrast omega oxidation and alpha oxidation.	4
4C.	How the cells synthesize glucose from non carbohydrate source?	2
5A.	Differentiate between primary metabolic gout and secondary metabolic gout. Give details of Adenosine deaminase deficiency	4
5B.	Explain the chemiosmotic coupling mechanism and the complexes involved in it.	4
5C.	Explain the structure of cholesterol.	2