BT-11	Roll No.									

M. Tech.

(SEM III) ODD SEMESTER EXAMINATION 2015-16

BIOCHEMISTRY, BIOPHYSICS AND MICROBIOLOGY

[Time: 3 hrs.] **[Max. Marks: 100]**

Note: ***Attempt all questions. All questions carry equal Marks.***

Q1. Attempt any *TWO* of the following. **[10X2]**

(a) Describe the basic physical principle and methods underlying nuclear magnetic resonance spectrometry.

(b) Define different stages in growth curve of bacteria.

(c) Explain the Michaelis-Menten kinetics.

Q2. Attempt any *TWO* of the following. **[10X2]**

(a) Provide detailed history of microbiology. How it lead the way for immunology?

(b) Compare the relative advantages and disadvantages of x-ray crystallography and NMR spectroscopy for protein structure determination.

(c) Describe the primary, secondary, tertiary, and quaternary structures of proteins.

Q3. Attempt any *TWO* of the following. **[10X2]**

(a) Define terms specific activity, cofactor, prosthetic group, apoenzyme, and holoenzyme.

(b) Describe the effects of competitive and noncompetitive inhibitors on the kinetics of enzyme.

(c) How cellular organization of Prokaryotes differs from that of Eukaryotes?

Q4. Attempt any *TWO* of the following. **[10X2]**

(a) Describe diagrammatically the various morphological characteristics of bacteria.

(b) What are the different steps and criteria for the classification of newly discovered bacteria?

(c) Explain the differences between *Glycolysis* and *Krebs Cycle*.

Q5. Write short note on any ***FOUR*.** **[5X4]**

(a) Turnover number

(b) Stereoisomers

(c) Gram's staining principle

(d) Henderson-Hasselbalch equation

(e) Acid-Fast Bacteria

(f) Ramachandran plot