# MANIPAL INSTITUTE OF TECHNOLOGY MANIPAL

(A constituent unit of MAHE, Manipal)

**V SEMESTER B.TECH. END SEMESTER EXAMINATIONS DEC 2018** 

## SUBJECT: INTRODUCTION TO BIOCHEMICAL ENGINEERING

## PE I [CHE 4018]

### REVISED CREDIT SYSTEM (28/12/2018)

Time: 3 Hours

### MAX. MARKS: 50

### **Instructions to Candidates:**

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

1A.	Explain in detail about the bacterial cell structure and functions of various organelles with a neat sketch.	05
1 <b>B</b> .	Write a short note on secondary structure of DNA with a schematic representation.	03
1C.	What is protein denaturation? Will there be any change in the primary structure when the protein is denatured?	02
2A.	The results for enzyme activity analysis can be found below: $\begin{array}{c c c c c c c c c c c c c c c c c c c $	07
2 <b>B</b> .	Write a short note on different types of inhibitors which affect the enzymatic actions.	03
3A.	Explain Krebs Cycle with a schematic representation.	06

3B.	Write a short note on hydrolysis of ATP molecules	04
4A.	Derive an expression to study the effects of inhibitory substrates on enzyme kinetics.	05
4B.	Discuss about various phases involved in cell growth.	03
4C.	Draw a neat sketch of an air lift bioreactor	02
5A.	Derive an expression for computing the number of receptor-ligand complexes formed at any time't'.	08
5B.	Write a short note on Prey-predator oscillation with a graphical representation.	02

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