



**MANIPAL INSTITUTE OF TECHNOLOGY**

**MANIPAL**

*(A constituent unit of MAHE, Manipal)*

**VII SEMESTER B. TECH CHEMICAL ENGINEERING**

**EXTERNAL EXAMINATION DECEMBER 2021**

**SUBJECT: INTRODUCTION TO BIOCHEMICAL ENGINEERING**

**[CHE 4064]**

Date of Exam: **20/12/2021**

Time of Exam: **9.20 A.M– 10.35 A.M**

Max. Marks: **20**

**PART – B**

<b>1A.</b>	Define Lipids. Explain different types of Lipids	<b>02</b>
<b>1B.</b>	What are the advantages and disadvantages of immobilization of enzymes?	<b>03</b>
<b>1C.</b>	Explain the evaluation of competitive, un-competitive and non-competitive inhibition of an enzyme catalyzed reaction.	<b>05</b>
<b>2A.</b>	Differentiate between anabolism and catabolism.	<b>02</b>
<b>2B.</b>	What is ATP? ATP is an energy currency of the cell. Justify.	<b>03</b>
<b>2C.</b>	Describe the important measurement and control parameters for optimum operation of bioreaction and support your answer with neat diagram.	<b>05</b>