Seat No.: _____ Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

B. Pharm. – SEMESTER -3 EXAMINATION – SUMMER -2021

Subject Code:2230003 **Date: 03/09/2021**

Subject Name: Pharmaceutical chemistry III (Biochemistry I)

Time: 02:30PM to 05:30PM **Total Marks: 80**

Instructions:

1. **Attempt any five questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Explain various transport processes of nutrients and ions across cell membrane.	**06**
	(b)	Draw a labeled diagram of cell. Explain structure and functions of mitochondria.	**05**
	(c)	Define and classify fatty acids by several ways with examples.	**05**
Q.2	**(a)**	Define and classify carbohydrates with examples. Write structures and reactions of monosaccharides.	**06**
	(b)	Write a note on compound lipids.	**05**
	(c)	Define and classify polysaccharides. Discuss its examples.	**05**
Q.3	**(a)**	Explain various steps of glycolysis occurring in aerobic condition along with energetics.	**06**
	(b)	Define gluconeogenesis. Explain its steps.	**05**
	(c)	Explain reactions of pentose phosphate pathway. Add a note on its significance.	**05**
Q.4	**(a)**	Write about reactions, significance and energetics of citric acid cycle.	**06**
	(b)	Explain biochemical role of hormones involved in regulation of blood glucose level.	**05**
	(c)	Discuss metabolism of fructose along with disorders associated with its abnormal metabolism.	**05**
Q.5	**(a)**	Explain steps of β-oxidation of fatty acids with energetics.	**06**
	(b)	Define enzymes. Explain its mechanism of action.	**05**
	(c)	Discuss therapeutic and diagnostic applications of enzymes with examples.	**05**
Q. 6	**(a)**	Enumerate ketone bodies. Write about its biosynthesis and utilization.	**06**
	(b)	Explain steps involved in biosynthesis of cholesterol.	**05**
	(c)	Define with examples coenzymes. Explain biochemical role of any two.	**05**
Q.7	**(a)**	Write a note on disaccharides.	**06**
	(b)	Write sources and output of water. Name hormones involved in body water regulation.	**05**
	(c)	Define following terms : 1. Rancidification 2. Mutarotation 3.Glycogenolysis 4. Amphibolic role of citric acid cycle 5. Invert sugar	**05**

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