Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

B. Pharm. – SEMESTER – III • EXAMINATION – SUMMER • 2015

Subject Code: 2230003 Date: 11-06-2015

Subject Name: Pharmaceutical Chemistry – III (Biochemistry – I)

Time: 02:30 pm - 05:30 pm 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)**	Classify carbohydrates. Describe the structure and functions of polysaccharides.	**06**
	(b)	Explain following terms with significance: i) Apoenzymes ii) Holoenzymes iii) Epimers iv) Invert sugar v) Mutarotation	**05**
	(c)	What are essential fatty acids? Write functions and deficiency symptoms.	**05**
Q.2	**(a)**	How is galactose metabolized in the body?	**06**
	(b)	Explain carnitine shuttle transport for fatty acids. What is metabolic water?	**05**
	(c)	Discuss the transport mechanism across cell membrane.	**05**
Q.3	**(a)**	Describe HMP shunt and give its significance.	**06**
	(b)	Explain TCA cycle along with energetics.	**05**
	(c)	Discuss the role of hormones in maintenance of blood sugar level.	**05**
Q.4	**(a)**	Classify lipids with example. Add a note on triglycerides.	**06**
	(b)	Describe various chemical tests to check the purity of fats and oils.	**05**
	(c)	Classify and explain phospholipids.	**05**
Q.5	**(a)**	Discuss in detail Cholesterol biosynthesis.	**06**
	(b)	Write about biosynthesis and utilization of ketone bodies in diabetics.	**05**
	(c)	How bile acids are formed in the body? Write their significance.	**05**
Q. 6	**(a)**	Differentiate following pairs: (Any two) i) α-oxidation and β-oxidation ii) Gluconeogenesis and Glycolysis iii) Enzymes and Co-enzymes	**06**
	(b)	Explain significance of metals and vitamins as co-enzymes.	**05**
	(c)	Describe absorption, transport and storage of iron in body.	**05**
Q.7	**(a)**	Classify enzymes. Write a note on factors affecting enzyme activity.	**06**
	(b)	Give an account on mechanisms of enzyme action.	**05**
	(c)	Discuss biochemical role and mechanism of regulation of blood calcium.	**05**

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