Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–IV (New) EXAMINATION – WINTER 2015

Subject Code:2141401 **Date:19/12/2015**

Subject Name: Food Nutrition and Biochemistry

Time: 02:30pm to 05:00pm **Total Marks: 70**

Instructions:

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

Q.1	**(a)**	Do as directed. i) Enlist the factors affecting human nutrition. ii) What are deficiency symptoms and food sources of folic acid?. iii) Carbohydrate imparts anti-ketogenic effect. Justify the statement. iv) What do you understand by protein efficiency ratio (PER)? v) Introduce briefly the role of bile secretion in digestion of food.	**10**
	(b)	Draw a well labeled Food Guide Pyramid with food groups and serving sizes.	**04**
Q.2	**(a)**	Derive Michaelis Menten equation for enzyme kinetics. Explain competitive and non-competitive inhibition.	**07**
	(b)	Explain the functions and deficiency symptoms of protein in human nutrition.	**07**
		OR	
	(b)	State the advantages and limitations of vegetarian diet? Suggest the remedies to overcome the limitations of vegetarian diet.	**07**
Q.3	**(a)**	Describe the properties, functions and deficiency symptoms of vitamin C.	**07**
	(b)	What are deficiency symptoms and excessive consumption consequences of vitamin D?	**04**
	(c)	State the deficient vitamin in the following disorders / diseases. i) Xerophthalmia ii) Eczema and toad skin iii) Glossitis	**03**
		OR	
Q.3	**(a)**	Explain the process of carbohydrate digestion in human being.	**07**
	(b)	Define absorption. Briefly explain different types of absorption process.	**04**
	(c)	Draw a well labeled diagram for cross section of human intestinal wall and mucosal folds.	**03**
Q.4	**(a)**	Explain the metabolic pathway for oxidation of glucose to pyruvate.	**07**
	(b)	Discuss the factors affecting digestion of food.	**07**
		OR	
Q.4	**(a)**	Discuss the functions of mineral in human nutrition.	**07**
	(b)	Explain Krebs cycle along with ATP synthesis.	**07**
Q.5	**(a)**	Define RDA. Explain the factors affecting RDA.	**07**

	(b)	Calculate the calorific value of chapati weighing 150 g and having the following composition. Carbohydrate – 65%, Protein – 8%, Fat – 2%	**04**
	(c)	How nutrition pattern of infant is different from an adult?	**03**
		OR	
Q.5	**(a)**	Explain the physiological functions of food in human being.	**07**
	(b)	Briefly explain the effect of thermal treatment on fat.	**04**
	(c)	Introduce the following terms. i) Enrichment ii) Fortification iii) Supplementation	**03**

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