Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–IV (NEW) - EXAMINATION – SUMMER 2017

Subject Code: 2141401 **Date: 30/05/2017**

Subject Name: Food Nutrition & Biochemistry

Time: 10:30 AM to 01:00 PM **Total Marks: 70**

Instructions:

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

Q.1 Do as directed. **14**

1. Define malnutrition.
2. State the consumption consequences of trans-fat.
3. Define omega-3 fatty acid.
4. What are signs of poor nutritional status?
5. State the most potent form of thiamin in human body.
6. Write the rich sources for vitamin lactoflavin.
7. Mention the chemical nature of vitamin A.
8. Write the outstanding deficiency symptoms for calcium.
9. Salivary amylase is referred as _____ . (Fill in the blank).
10. Pancreatic lipase is referred as _____ (Fill in the blank)
11. Define Quetelet Index.
12. State the importance of Vmax in enzyme kinetics.
13. Enlist the advantages of vegetarian diet.
14. List out the factors affecting RDA (Recommended Daily Allowances).

Q.2 **(a)** Draw Food Guide Pyramid along with recommended serving sizes of each food groups. **03**

(b) Define absorption of nutrients. Briefly highlight on the passive transport mechanisms. **04**

(c) List out the advantages of food processing. Discuss the effect of heat processing on carbohydrate. **07**

OR

(c) Explain the properties, functions and deficiency symptoms of pyridoxine. **07**

Q.3 **(a)** Differentiate between bile secretion and gastric secretion. **03**

(b) Highlight on the advantages of food fortification. **04**

(c) A paratha weighing 200 g prepared from wheat flour, potato and cheese in the ratio of 3:1.5:0.5. The prepared paratha fried in 10 g butter. Calculate the calorific value of paratha. Composition of ingredients is as follows. **07**

Parameter	Wheat flour	Potato	Cheese	Butter
Carbohydrate, %	65	74	10	0
Protein, %	7.8	1.2	23.5	0
Fat, %	0.7	1.0	27.0	80

OR

Q.3 **(a)** Differentiate between soluble fiber and insoluble fiber. **03**

(b) How the protein gets digested in human body? **04**

(c) Derive the Michaelis – Menten equation for single enzyme catalyzed reaction. **07**

Q.4	**(a)**	Calculate BMI for a person whose weight and height are 75 kg and 5 feet 6 inches respectively. Comment on the obesity grade	**03**
	(b)	Briefly explain koshland induced fit hypothesis for enzyme action.	**04**
	(c)	Enlist quality indices for protein. Discuss the functions and deficiency symptoms of protein in human body.	**07**

OR

Q.4	**(a)**	What are the nutritional requirements of an infant?	**03**
	(b)	Briefly explain classification of enzymes.	**04**
	(c)	Define balanced diet. What are recommendations for balanced diet given by nutrition expert group of ICMR?	**07**
Q.5	**(a)**	Write the deficient mineral in the following disorders occurs in human. i) Goiter ii) Bowing of legs iii) Muscular weakness	**03**
	(b)	Give an account of ATP molecules generation in TCA cycle.	**04**
	(c)	Discuss the classification of food on the basis of physiological function in human being.	**07**

OR

Q.5	**(a)**	What are excessive consumption consequences of carbohydrate?	**03**
	(b)	Highlight on the functions of vitamin C.	**04**
	(c)	Discuss Embden – Meyerhof (EM) pathway along with an account of ATP synthesis.	**07**