Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

B.E. Sem-IV Examination June- 2010

Subject code: 141401

Subject Name: Food Nutrition and Biochemistry

Date: 15 /06 /2010 **Time: 10.30 am – 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 **(a)** Justify the following statements **08**

(i) Cofactors are molecular teeth and tools of enzymes.
(i) Vitamin A is referred as Anti-xerophthalmic vitamin.
(ii) Fats and oils are placed at apex of Food guide pyramid.
(iii) Food becomes safer for consumption after processing.

(b) Define Balanced diet. Calculate calorific need and body mass index of moderately working person whose weight and height are 72 kg and 175 cm respectively. **06**

Q.2 **(a)** Discuss the effect of heat processing on carbohydrate. **07**

(b) Explain various specificities of enzymes with suitable example particularly proteases. **07**

OR

(b) Explain reaction mechanism of pyruvate dehydrogenase complex with each cofactors. **07**

Q.3 **(a)** Explain Nutrient wheel with its component. **06**

(b) Explain glycolysis with each steps as a universal metabolic pathway and give end products in different conditions **04**

(c) Differentiate between complete protein and incomplete protein. **04**

OR

Q.3 **(a)** What are functions of carbohydrate in human body? Mention consequences which occur after excessive consumption of carbohydrate in human body. **06**

(b) Give classification of enzymes with appropriate examples for each one with systematic name **04**

(c) Write rich and poor food sources of Folic acid and Vitamin C. **04**

Q.4 **(a)** How carbohydrate is digested in human body? **06**

(b) How endogenous lipooxygenases effect on food quality? **04**

(c) State the significance of saliva and Gastric juice in human nutrition. **04**

OR

Q.4 **(a)** Explain chemical characteristics and functions of Vitamin D in human body. **06**

(b) Give account on inactivation of enzymes and anti nutritional factors by physical method of food processing **04**

(c) Write classification of mineral based on requirement by human body with suitable examples. **04**

Q.5	**(a)**	What do you mean by Basal Metabolism Rate (BMR)? Discuss factors affecting BMR.	**06**
	(b)	Calculate number of total ATP from Oleic acid (C18:1Δ9)by β-oxidation, write each steps of one cycle only	**04**
	(c)	What are signs of good nutritional and poor nutritional status?	**04**

OR

Q.5	**(a)**	What are important stages in a man's life cycle? How nutritional need of infant is different from adult?	**06**
	(b)	How enzyme can be used to remove unwanted compounds from food products? Answer with suitable examples of enzymes	**04**
	(c)	What are guidelines and benefits of Food Fortification?	**04**

****