

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 (C18:1 Δ 9) 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**
