

GUJARAT TECHNOLOGICAL UNIVERSITY**B. E. Semester-IV- Examination June- 2011****Subject code: 141401****Subject Name: Food Nutrition and Biochemistry****Date: 02/06/2011****Time : 10:30 am to 1:00 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) Niacin requirement is related with calorific intake of an individual
(ii) Nutritional value of food can be improved through processing.
(iii) Vitamin E is natural antioxidant.
(iv) Most of enzymes are both reaction and substrate specific.

- (b) Calculate calorific need and Quetelet Index of moderately working person **06**
whose weight and height are 67 kg and 178 cm respectively. Comment on his obesity grade.

- Q.2** (a) Explain Nutrient Wheel with its components **07**
(b) Explain effects of temperature on enzyme, enzyme activity and enlist **07**
conditions for initial velocity determination

OR

- (b) Explain reaction mechanism of pyridoxal phosphate as cofactors in various **07**
type reactions

- Q.3** (a) What are functions of fat in human body? **06**
(b) Explain fate of glucose after absorption in body along with different **04**
conditions.
(c) How protein is absorbed in human body? **04**

OR

- Q.3** (a) Explain functions and deficiency symptoms of vitamin C in human being? **06**
(b) Give classification of enzymes with appropriate examples for each one with **04**
systematic name
(c) Which are factors influencing human nutrition? **04**

- Q.4** (a) How the digestion of carbohydrate is carried out in human body? **06**
(b) How physical methods of food processing affect on enzymes and anti **04**
nutritional factors
(c) Discuss the effect of heat processing on protein. **04**

OR

- Q.4** (a) What do you mean by RDA? Discuss the factors affecting RDA. **06**
(b) Give list of endogenous enzymes and its effect on various properties of foods **04**
(particularly fruits and vegetables)
(c) Differentiate between fat soluble and water soluble vitamin. **04**

- Q.5** (a) Discuss deficiency symptoms of Calcium and Iodine. **06**
(b) Calculate number of total ATP from oxidation of acetyl CoA by TCA, give name of each high energy generating steps of TCA **04**
(c) Draw a well labeled diagram of Intestinal mucosal layers. **04**

OR

- Q.5** (a) What are important stages in a man's life cycle? What precautions must be exercised in early adulthood in order to ensure a healthy old age? **06**
(b) How enzyme can be used for production of wanted compounds in food products? Answer with its purpose and suitable examples of enzymes **04**
(c) What do you understand by Food Fortification, Restoration, Enrichment and Supplementation **04**
