

**GUJARAT TECHNOLOGICAL UNIVERSITY****B. E. - SEMESTER – IV • EXAMINATION – WINTER 2012****Subject code: 141401****Date: 30/12/2012****Subject Name: Food Nutrition and Biochemistry****Time: 02.30 pm - 05.00 pm****Total Marks: 70****Instructions:**

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

- Q.1 (a) Answer the following questions in short. 06  
 (i) What do you mean by white egg injury?  
 (ii) Why fats and oils are placed at apex of food guide pyramid?  
 (iii) Define term coenzyme.  
 (iv) Vitamin K is referred as Anti-hemorrhagic Vitamin. Justify the statement.  
 (v) What mean by anabolism?  
 (vi) What do you understand by Thermal effect of feeding?
- (b) Draw nutrient wheel and brief about its components. 04
- (c) Explain effect of temperature on rate of enzymatic reaction with diagram. 04
- Q.2 (a) Discuss the various regulations mechanism of enzyme activity with suitable examples. 07  
 (b) Write classification of fat and state the functions of fat in human nutrition. 07
- OR**
- (b) How the carbohydrate gets affected during heat processing? 07
- Q.3 (a) Discuss the functions of Vitamin A and also mention food sources of vitamin A. 06  
 (b) Mention the provitamin in the followings: 04  
 (i) Vitamin D2 (ii) Vitamin D3 (iii) Niacin (iv) Vitamin A  
 (c) Write enzyme names with the function which are involved in dairy products and sweetener production. 04
- OR**
- Q.3 (a) Discuss the functions and deficiency symptoms of vitamin B<sub>12</sub>. 06  
 (b) What are salient features of water soluble vitamins? 04  
 (c) Introduce fate of glucose after digestion and absorption in human body. 04
- Q.4 (a) Describe the absorption process for fat in human body. 06  
 (b) What is the importance of gastric juice and saliva in digestion of food? 04  
 (c) What are the reactions involved in elimination of amino group as nitrogen excretion? 04
- OR**
- Q.4 (a) Explain the process of protein digestion in human body. 06  
 (b) Discuss the factors which affects on human nutrition. 04  
 (c) Write classification and nomenclature of enzymes with suitable examples. 04
- Q.5 (a) Write remarkable properties of enzymes with suitable examples. 06  
 (b) Discuss the factors affecting on digestion in human being. 04  
 (c) Calculate calorific need and body mass index of moderately working adult whose weight and height are 78 kg and 168 cm respectively. 04
- OR**
- Q.5 (a) Write  $\beta$ -oxidation of C<sub>18</sub> carbon fatty acid and calculate number of ATP generated on complete oxidation to CO<sub>2</sub>. 06  
 (b) Define RDA. State the uses of RDA. 04  
 (c) How the nutritional requirement of an infant is different than that of adult? 04

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