

GUJARAT TECHNOLOGICAL UNIVERSITY**B.E. Sem-III Remedial Examination May 2011****Subject code: 131405****Subject Name: Introduction to Food Processing Technology****Date: 20-05-2011****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) Discuss present status of food in India. Also describe prospects of future growth. **07**
- (b) Explain food as a source of nutrients. Discuss various functions of food. **07**
- Q.2** (a) Discuss various unit operations used in food processing industry along with equipments and machinery used. **07**
- (b) Describe irradiation and drying methods of food preservations. **07**
- OR**
- (b) (i) In a process of producing jam, crushed fruit containing 15% soluble solids is mixed with sugar (1.2 kg sugar/kg of crushed fruit) and pectin (0.002 kg pectin/kg of crushed fruit) in a mixture. The resultant mixture is then evaporated in a heating kettle to produce jam containing 70% solids from feed of 100 kg of crushed fruit. Calculate the water evaporated and jam produced **05**
- (ii) Explain Mass balance **02**
- Q.3** (a) Discuss food deterioration along with various factors causing it. **07**
- (b) In a food processing operation 20 kg of water per second is to be heated from 25 °C to 85 °C. To do this, steam at 150 °C is passed from a boiler in to a copper coil immersed in water. The steam condenses in the coil and returned to water at 95 °C. How many kg of steam is required per second for heating? The specific heat and latent heat of steam may be taken as 4.2 KJ/kg and 2260 KJ/kg respectively. **05**
- (c) Explain energy balance. **02**
- OR**
- Q.3** (a) Explain statutory laws of food industries. **07**
- (b) Explain obesity. **03**
- (c) Write short note on soft drink and spices **04**
- Q.4** (a) Explain heating and cooling methods for food. **07**
- (b) The dry bulb and dew point temperature of ambient air were found to be 302K (29 °C) and 291K (18 °C) respectively and barometer reads 100 kPA. Compute **05**
- (a) Absolute humidity
- (b) Percent relative humidity
- (c) Percent Saturation
- (d) Humid heat
- (e) Humid volume

	(c) Explain use of steam tables.	02
	OR	
Q.4	(a) Discuss composition of cereals, milk and legumes.	07
	(b) Explain design of foods.	03
	(c) Define the following : Cleaning , Grading, Separation and Extraction	04
Q.5	(a) Explain concept of entrepreneurship and industrial training	07
	(b) Explain food product development.	07
	OR	
Q.5	(a) Discuss process control and instrumentation	04
	(b) Discuss recommended daily allowance.	03
	(c) What is quality? How it is controlled? Explain sensory method for food evaluation.	07
