

GUJARAT TECHNOLOGICAL UNIVERSITY
BE SEM-III Examination-Dec.-2011

Subject code: 131405**Date: 13/12/2011****Subject Name: Introduction to Food Processing Technology****Time: 2.30 pm -5.00 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) What are the importances of size reduction in food industries? Discuss different mills used for size reduction. Discuss Kick's and Rittinger's law in detail. **07**

(b) A retort and 2000 cans of tuna fish have been heated to a uniform temperature of 116°C . It is desired to cool the cans to 35°C before removing them from the retort. How much cooling water is required if it enters the retort at 20°C and leaves at 30°C . Given **07**

Specific heat of tuna fish = $3.65\text{kJ/kg}^{\circ}\text{C}$

Specific heat of can wall = $0.46\text{kJ/kg}^{\circ}\text{C}$

Specific heat of water = $4.18\text{kJ/kg}^{\circ}\text{C}$

Mass of tuna fish/can = 450gm

Energy required to cool retort = 75000KJ

Mass of can wall/can = 55g

Q.2 (a) Define the followings; **07**

1. Dry bulb temperature
2. Relative humidity
3. Mass balance
4. Specific volume
5. Sensible and Latent heat

(b) Write the full form of the followings; **07**
CFTRI, NIFTEM, ICAR, FPO, BIS, PFA, ISI

OR

(b) Write short note **07**

1. Entrepreneurship
2. Industrial training
3. Cooling method of preservation

Q.3 (a) What is food quality? Discuss food quality evaluation method. **07**

(b) Discuss statutory laws for food industry. Explain recommended daily allowance for nutrients. **07**

OR

- Q.3 (a)** Define / Explain the following terms **07**
1. Nutrients
 2. Spices
 3. Poultry food
 4. Chemical additive
 5. Ready to eat food
 6. Meat
 7. Pasteurization
- (b)** Answer the following **07**
1. Give prospects of future growth for food in industry
 2. What is food composition?
 3. Give advantages of entrepreneurship.
 4. What is design of food?
 5. What is radiation method of preservation?

- Q.4 (a)** Answer the followings **07**
- (i) What is training?
 - (ii) Give function of protein.
 - (iv) What is enzyme?
 - (v) What is a balance diet?
 - (vi) What is sensory evaluation method?

- (b)** Explain food groups in details. How will you develop food product? **07**

OR

- Q.4 (a)** What are the different purposes of instrumentation and control in food industry? List out the equipments used for temperature measurement, flow measurements and pressure measurements. **07**
- (b)** Discuss status of food processing in India, abroad and Gujarat. Give nutrient contents of fruits & vegetable, cereals and oil seeds. **07**

- Q.5 (a)** Discuss the followings; **07**
1. Steam blancher
 2. Activity of microorganisms
 3. Conduction and Convection
 4. Filtration and Centrifugation

- (b)** Describe following **07**
1. Describe food as a source of nutrients.
 2. Food functions.
- Discuss pulses, milk and soft drink.

OR

- Q.5 (a)** What do you understand by cleaning, grading, sorting and scalping? What are different criteria based on which, cleaning and grading equipments are classified? Discuss any one cleaning or grading equipment with diagram. **07**
- (b)** Define pulping, peeling and blanching. Discuss different methods of peeling in detail. **07**
