Seat No.: _____ *Enrolment No._____*

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER– III EXAMINATION – SUMMER 2015

Subject code: 131405 **Date:27/05/2015**
Subject Name: Introduction to Food Processing Technology
Time: 02.30pm-05.00pm **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)** Differentiate between **14**

1. Dry bulb and Wet bulb temperature
2. Material and Energy balance
3. Cleaning and Grading
4. Pasteurization and Sterilization
5. Activity of microorganisms
6. Conduction and Convection
7. Filtration and Centrifugation

Q.2 **(a)** What do you understand by peeling? Discuss different methods of peeling in detail. **07**

(b) What are different criteria based on which, cleaning and grading equipments are classified? Discuss any one cleaning or grading equipment with diagram **07**

OR

(b) Define / Explain the following terms **07**

Nutrients, Spices, Poultry food, Chemical additive, Ready to eat food, Meat, Pasteurization

Q.3 **(a)** Calculate the amount of cooling water required to cool a food paste at the rate of 110kg/hr, containing 35% solids from 85 to 25^0C in a counter flow heat exchanger. The increase in temperature of water is not allowed to exceed 10^0C. The specific heat of liquid food paste is 2.85 and water is 4.18KJ/kg k. **07**

(b) Explain the application of Psychrometric Chart in food processing technology. Discuss the property of Psychrometric Chart and relative humidity and specific volume. **07**

OR

Q.3 **(a)** Discuss the composition of cereals and pulses and their products. Also discuss different cooling and heating method of preservation. **07**

(b) What is food quality? Discuss food quality evaluation method. **07**

Q.4 **(a)** Fresh mango juice containing 10% solid is concentrated in an evaporator to 60% solids. If the juice is entering at 600kg/hr. Calculate the amount of water removed and concentrated juice is produced. Also draw the flow diagram of the above process. **07**

(b) 1000 kg of mixture of benzene (B) and toluene (T), containing 40% by mass of B to be separated in to two streams in a distillation column contains 375kg of B and the bottom output stream contains 515 kg of T.

1. Perform mass balance for B and T
2. Determine the composition of the top and bottom streams

OR

Q.4 **(a)** Write short note **07**

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

(b) 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?

Q.5 **(a)** How you grade the present status of food industry in India? Give your view regarding the future growth of food processing in India.

(b) Importance of size reduction of food products. Discuss different machines used for size reduction of grains with diagram. **07**

OR

Q.5 **(a)** Give the importance of instrumentation and control in food industry. List out the equipments used for temperature measurement, flow measurements and pressure measurements. **07**

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

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