

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-IV • EXAMINATION – SUMMER 2013

Subject Code: 141403

Date: 12-06-2013

Subject Name: Materials and Manufacture of Food Equipment

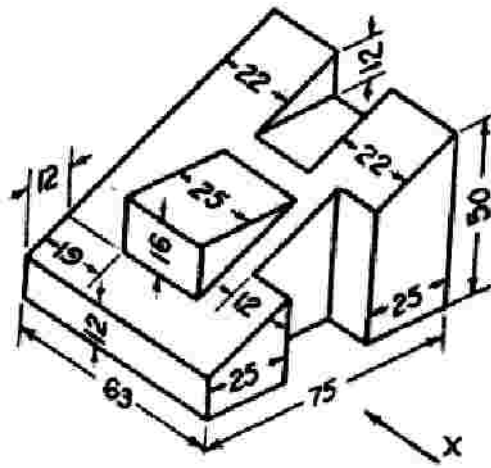
Time: 10:30am – 01:00pm

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)** Using first angle projection method draw front view, top view and both side views for an given object. **14**



- Q.2 (a)** What do you understand by Eutectic, Peritectic, Eutectoid and Peritectoid system. Explain the cooling curve when the metal is completely soluble in liquid state and partially soluble in solid state. **07**

- (b)** Define the following terms: **07**

1. Root
2. Crest
3. Tolerance
4. Flank angle
5. Geometric tolerance
6. Lower deviation
7. Tolerance zone

OR

- (b)** Explain the purposes of evaporators in food industry. Draw the feeding patterns with diagram in detail. **07**

- Q.3 (a)** Explain carburizing with respect to heat treatments of metal. What do you understand by Pack, Liquid and Gas carburizing? **07**

- (b)** List the applications of heat exchanger in food industry as well as the types of heat exchangers. Draw the temperature profile diagram for counter and parallel flow. **07**

OR

- Q.3 (a)** Write a short note on different types of lines. Give a difference between first angle projection method and third angle projection method. **07**

(b) Explain Bain's curve in detail with diagram. Also state the importance of Bain's curve. 07

Q.4 (a) What is polymerization? Describe in brief about method of polymerization. 07

(b) What do you understand by hardening? List out different cooling rates for the media used for hardening. 07

OR

Q.4 (a) Describe in brief about geometric tolerance. What are the different types of sectional views? Brief about each type. 07

(b) Explain the working principle of gas welding with its flame characteristics. List out advantages and disadvantages of the same. 07

Q.5 (a) Discuss the followings with diagram; 07

1. Fusion zone
2. Heat affected zone
3. Toe of weld
4. Rated current

(b) Write a short note on Screw threads. What are composite materials? Give classification of composite materials. 07

OR

Q.5 (a) Explain the working of friction welding with diagram. Discuss physical classification of flux. 07

(b) Differentiate between 07

1. Consumable and Non-Consumable electrode
2. Liquid carburizing and Gas carburizing
3. Aus-tempering and Mar-tempering
