GUJARAT TECHNOLOGICAL UNIVERSITY BE - SEMESTER-IV EXAMINATION – WINTER 2015

Si Si T In	ubjec ubjec ime: structi	t Code: 141403 Date:30/12/2015 t Name: Materials and manufacture of food equipments 02:30pm to 05:00pm Total Marks: 70 ons:	
	1 2 3	 Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks. 	
Q.1	(a)	Explain clearly the difference between the first angle projection method and the	04
	(b)	Draw Buttress thread and write use of it.	03
	(c)	What is the difference between annealing and tempering? Discuss different annealing process in detail.	07
Q.2	(a)	In first angle projection method (i) The comes between the & the	03
		 (ii) The comes between the te the (iii) The view is always the view (iii) The left side view is placed to the of the view. 	
		 Fill in the blanks (i) In a small size hole the thread is cut by a tool called (ii) The slope of the thread is equal to one half its (iii) The of Unified threads are rounded while its are cut parallel to 	04
		 (iii) The <u></u> of official directors are founded while its <u></u> are cut parallel to the axis of the screw. (iv) The diameter of the screw at the crests is called <u></u> diameter, while that at the matrix is called <u></u>. 	
	(b)	What is Plate Heat Exchanger (PHE)? Why it is popular in food industry? With the help of a neat diagram show different parts of plates in PHE.	07
	(b)	Explain different engineering properties of materials. Discuss hardness, toughness, ductility, fatigue and creep.	07
Q.3	(a)	Explain the importance of TTT diagram and write down the various steps to construct a TTT diagram	07
	(b)	List out important points to be kept in mind during welding and explain different welding defects	
		OR	
Q.3	(a)	Give the short notes on (1) Friction welding (2) Submerged arc welding	06
	(b)	(3) Flame characteristics List out different welding process. Define Maximum rated open circuit, Rated current and Duty cycle.	03

- Write in brief; (c)
 - 1. Multiple effect evaporator
 - 2. Joint efficiency
 - 3. Cold cracking
 - 4. Cyaniding
 - 5. Martensite

14

05



Using first angle projection method draw (i) Front view (ii) Side view from left (iii) Top view of the given pictorial view.

All the dimensions of given figure are in mm.

OR

Q.4	(a)	Draw and explain cotter joint with gib.	07
	(b)	Draw three views of a hexagonal headed bolt 24 mm diameter and 100 mm long with a hexagonal nut and a washer.	07
Q.5	(a)	What is composite material? Write short note on reinforced composite.	07
	(b)	Write advantages of vulcanization of rubber and give applications of rubber.	07

OR

- What are geometric tolerances? Mention different types of geometric tolerances. Q.5 **(a)** 07 What is the difference between lead & pitch in screw threads? What do you mean by single start & multi start thread? 07
 - What is condensation polymerization? Discuss in details. **(b)**
