

Enrolment No.



Seat No.: _____

GUJARAT TECHNOLOGICAL UNIVERSITY **BE - SEMESTER- IV (New) EXAMINATION - WINTER 2019** Date: 13/12/2019 Subject Code: 2141403 **Subject Name: Materials & Manufacture of Food Equipment** Time: 10:30 AM TO 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. 4. Provide drawing sheet to the students along with the supplementary **Q.1** (a) Define thermosetting plastics and give examples. 03 **(b)** Write short notes on the followings: 04 1. Puddle 2. Oxidizing flame 3. Natural flame 4. Spot facing (c) Differentiate between single and multiple start threads with the help of neat 07 labeled diagram. The number of threads in a in M30 external ISO metric screw thread bolt are 10 per inch. Calculate the followings: Slope of the screw for a single start thread (i) Nominal diameter (ii) Pitch (iii) **Q.2** (a) Differentiate between nitriding and cyaniding. 03 (b) Enlist methods of carburizing. Discuss the methods in detail. 04 Classify heat treatments. Explain in detail about quenching. Also list out 07 importance of heat treatment. OR (c) Write down the stepwise procedure to be followed for drawing hexagonal nut. 07 **Q.3** (a) Differentiate between right-handed and left-handed threads. 03 (b) With the help of a neat diagram show different parts of plates in PHE. 04 Enlist applications of evaporators in food industry. What is single effect 07 evaporators? With the help of a neat diagram indicate different methods of feeding in evaporators.



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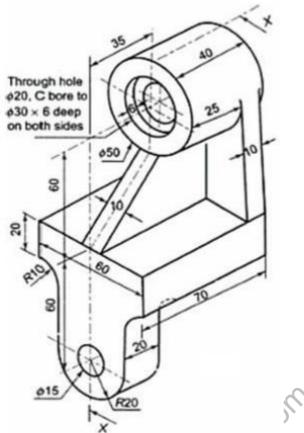
OR

Q.3	(a)	List down the types of welding joints.	03
	(b)	Explain the principle of tungsten inert gas welding with diagram.	04
	(c)	Explain iron allotropy in detail with neat diagram along with the cooling curve. And discuss micro constituents of iron and steel.	07
Q.4	(a)	Define polymer and mention its uses in food industry.	03
	(b)	Write a brief note on geometrical tolerance and it's types.	04
	(c)	Define the followings:	07
		 Pitch of the thread Tolerance Flatness of surface Lead of the thread Composite materials Bilateral limits Monomer 	
		OR	
Q.4	(a)	Give the detailed classification of threads. And explain the difference between actual and theoretical dimension of thread by taking any one thread as an example.	03
	(b)	Draw a neat labeled diagram of socket and spigot joint.	04
	(c)	Classify the keys and explain in detail about parallel keys. Also draw gib headed key fitted on the shaft of diameter 100mm with dimensions.	07
Q.5	(a)	Write a short note on third angle method of projection.	03
	(b)	Describe in detail about vulcanization of rubber.	04
	(c)	classify sectional views. Differentiate between full and half sectional views. Describe in brief about broken out sectional view.	07

OR



Q.5 Draw sectional front view and top view of given figure by first angle method of projection.



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