Seat No	o.:	Enrolment No.	
		GUJARAT TECHNOLOGICAL UNIVERSITY	
	DIPLOMA ENGG V th SEMESTER-EXAMINATION – JUNE- 201		
Subje	ect cod	le: 355501 Date: 04/06/201	2
Subje	ect Nar	me: Fabrication Design	
Times	: 10:30	0 am – 01:00 pm Total Marks: 7	0
Instr	uction	is:	
	1. Att	tempt all questions.	
		ake suitable assumptions wherever necessary.	
	_	gures to the right indicate full marks. glish version is considered to be Authentic	
Q.1	(a)	Explain the Factors Affecting Selection Of Materials	07
α. ι	(b)	A cast iron column has internal diameter of 200 mm. what should be the	07
	(-)	minimum external diameter so that it may carry a load of 1.6 MN without	
		exceeding the stress 90 N/mm ²	
Q.2			
	(a)	Find the center of gravity of a 15 cm X 20 cm X 5 cm T section	07
	(b)	Explain stress concentration. Explain reducing stress concentration method with neat sketch.	07
		OR	
	(b)	Write brief note on 'moment of inertia'.	07
Q.3	()		
	(a)	Explain failure of riveted joint with neat sketch.	07
	(b)	A plate 120 mm wide and 15 mm thick is to be welded to another plate by	07
		means of parallel fillet welds. The plates are subjected to a load of 70 KN.	
		Find the length of the weld so that the maximum stress does not exceed 60 N/mm ² Consider the joint first under static loading and then under fatigue	
		loading. Take stress concentration factor = 2.7.	
		OR	
Q.3	(a)	Explain strength of welded joint in the following cases:	07
		(1) Circular fillet weld subjected to torsion	
	(h)	(2) Circular fillet weld subjected to bending moment	07
	(b)	A double riveted double cover butt joint in plates 20 mm thick is made with 25 mm diameter of rivet at 100 mm pitch. Permissible stresses are $Ft = 120$	07
		N/mm ² Fs = 100 N/mm^2 Fb = 150 N/mm^2 .	
		Calculate efficiency of joint with neat sketch.	
Q.4			
	(a)	Discuss in details the design of various types of heads and closers for	07
	/ b)	vessels as per codes.	07
	(b)	Discuss the Design preliminaries of pressure vessels as per ASME Sec-VIII	07
		OR	
Q. 4	(a)	Give the classification of various types of supports used in pressure vessels.	07
		And draw neat sketches of each.	
	(b)	Explain briefly the codes and standards used for manufacturing and testing	07
~ -		of process equipments.	
Q.5	(2)	Write the classification of various types of structures.	07
	(a) (b)	Explain in details the factors affecting design of structures.	07
	(~)	OR	51
Q.5	(a)	Explain with suitable examples bending moments shear force diagrams.	07
	(b)	Explain the basic steps in structure design like Transmission tower.	07