Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI • EXAMINATION - SUMMER- 2015

Subject Code: 163402 Subject Name: Metal Forming Processes			Date: 04/05/2015	
Time: 10.30am-01.00pm Instructions:		10.30am-01.00pm Total Marks:	Total Marks: 70	
	2.	Attempt all questions.Make suitable assumptions wherever necessary.Figures to the right indicate full marks.		
Q.1	(a)	What are the components of stress and explain about principle stress and stress deviator with an example	07	
	(b)	Explain briefly about Tresca yield criteria with necessary sketches	07	
Q.2	(a)	Explain the strain rate and metallurgical structure on metal working with suitable sketches	07	
	(b)	Explain about the mechanics of metal working operations with detailed description	07	
		OR		
	(b)	Explain about deformation zone geometry. Discuss about workability and residual stresses of metal forming	07	
Q.3	(a)	Define forging and discuss about open die forging and closed die forging with suitable sketches	07	
	(b)	Briefly explain defects, causes and remedies taken in forging OR	07	
Q.3	(a) (b)	Discuss about the forces and geometrical relationships in forging Explain about analysis of rolling load and give a detailed description of rolling	07 07	
		mill control		
Q.4	(a)	Briefly explain direct and indirect extrusion with necessary figures	07	
	(b)	Explain about deformation pattern involved in extrusion process OR	07	
Q.4	(a)	Describe Port- hole extrusion die with principle and operations	07	
	(b)	Explain about the production of seamless pipe and tubes with necessary figures	07	
Q.5		Describe the sheet metal forming using limit diagrams	07	
	(b)	Explain briefly the defects occurring in formability parts OR	07	
Q.5	(a)	Briefly explain the operation and working of electro hydraulic forming with a neat sketch	07	
	(b)	Explain Dynapak and petro forge forming using a suitable sketch	07	
