Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VIII EXAMINATION – WINTER 2015

Subject Code:182101 Date:09/1 Subject Name: Metal Working Processes Time: 2:30pm to 5:00pm Total Ma			Date:09/12/2015	
		ks: 70		
	1.	Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.		
Q.1	(a)	Compare Hot Working & cold working processes with advantages and limitations.	07	
	(b)	Briefly explain recrystallisation & Grain Growth with reference to Metal working process.	07	
Q.2	(a) (b)	Explain in detail various metallurgical variables of forging process. Classify the forging processes, also list different forging operation with sketch. OR	07 07	
	(b)	Discuss causes and remedies of forging defects.	07	
Q.3	(a)	Derive equation to determine length of arc of contact and relation between angle of bite and frictional coefficient for rolling.	07	
	(b)	Classify the different types of rolling mills. Explain any one with sketch in detail. OR	07	
Q.3	(a)	If contact angle in rolling is 17°, diameter of roll is 1000 mm than calculate maximum reduction possible by rolling, length of arc of contact. Also if radial force is 140 N than calculate frictional force.	07	
	(b)	Discuss rolling variables in detail.	07	
Q.4	(a)	List extrusion process variables. Discuss the term 'total extrusion pressure' and derive equation for the same.	07	
	(b)	Write short note on wire drawing process & its defect. OR	07	
Q.4	(a) (b)	List type of extrusion. Explain hydrostatic extrusion with sketch. Explain deformation zone in rolling with sketch.	07 07	
Q.5	(a) (b)	Explain any five sheet metal working operations indicting with sketch. Write short note on Electric discharge forming. OR	07 07	
Q.5	(a)	List different temperature measuring instruments. Explain use of thermocouple for temperature measurement in metal working processes.	07	
	(b)	Write short note on annealing of cold worked metal forming.	07	
