Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VIII • EXAMINATION – SUMMER • 2015				
Subject Code: 182101 Date:		Code: 182101 Date:15/05/201	5	
Su	bject	Name: Metal Working Processes		
	•	0.30AM-01.00PM Total Marks: '	70	
Ins	truction	ns:		
	1.	Attempt all questions.		
	2.	Make suitable assumptions wherever necessary.		
	3.	Figures to the right indicate full marks.		
Q.1	(a)	Define rolling and explain neutral point and angle of bite. Draw different rolling mills with neat sketch and label it.	07	
	(b)	Differentiate between hot and cold working processes.	07	
Q.2	(a)	Draw engineering stress strain diagram for ductile and brittle material with suitable example and define ductility, toughness, stiffness and hardness.	07	
	(b)	List rolling variables and discuss them.	07	
		OR		
	(b)	Explain workability.	07	
Q.3	(a)	Discuss annealing of cold worked metal.	07	
	(b)	Write note on Residual stresses.	07	
		OR		
Q.3	(a)	Define forging and compare open die and close die forging.	07	
	(b)	Explain different forging operations with neat sketch.	07	
Q.4	(a)	Derive equation of forging load by plane strain forging analysis.	07	
	(b)	Derive geometrical relationship of calculating projected length of arc of contact and relation of coefficient of friction and angle of bite.	07	
ΩA	(a)	OR Write note on optical pyrometer.	07	
Q.4	(a) (b)	List variables in wire drawing and discuss them.	07	
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Q.5	(a)	What is extrusion? Explain different extrusion process and explain role of lubricant.	07	
	(b)	Discuss rolling defects with their causes and remedies. OR	07	
Q.5	(a)	Write note on High Energy Rate Forming (HERF).	07	
	(b)	List sheet metal working processes and explain shearing and deep drawing.	07	
