Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII(NEW) • EXAMINATION – WINTER 2016

Subject Code:2171913 Date:18/11/2016

Subject Name:Metal Forming Analysis(Department Elective - I)

Time:10.30 AM to 1.00 PM Total Marks: 70

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Explain typical stress strain diagram for ductile material.	**07**
	(b)	Explain hotworking & Coldworking process with advantages & disadvantages.	**07**
Q.2	**(a)**	Explain VonMises & Tresca theory of yielding.	**07**
	(b)	Explain two dimensional stress analysis with Mohr circle diagram.	**07**
		OR	
	(b)	Define principle plane & principle stresses.	**07**
Q.3	**(a)**	Define equation for analysis of circular disc with slab analysis method.	**07**
	(b)	Determine engineering strain,True strain & reduction for a) Bar is doubled in Length b) Bar is halved in length.	**07**
		OR	
Q.3	**(a)**	Explain various forging operations with neat sketches.	**07**
	(b)	Explain friction board drop hammer for forging.	**07**
Q.4	**(a)**	Explain typical arrangement of roll & rollmills with neat sketches.	**07**
	(b)	Discuss analysis of strip rolling derive equation for projected arc length.	**07**
Q.4	**(a)**	Explain various Rolling defects,	**07**
	(b)	A cold roll sheet with a shear strength of 350MPa & thickness of 3mm is to be Subjected blanking operation.The diameter of blank to be obtained is 130mm & Clearance 0.075mm.What is the appropriate die & punch diameter & Punch force for operation?	**07**
Q.5	**(a)**	Explain drawbench process of drawing with neat sketch.	**07**
	(b)	Explain various operation performed on sheetmetal press machine.	**07**
		OR	
Q.5	**(a)**	Explain a) Forming Limit diagram b) Anistrophy in sheet metal	**07**
	(b)	Stress Analysis of extrusion process .	**07**

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