

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VII (NEW) - EXAMINATION – SUMMER 2018

Subject Code:2171913

Date:28/04/2018

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

Time:02.30 PM to 05.00 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)	Define (i) dry drawing (ii) wet drawing (iii) tube drawing.	03
	(b)	Explain various Rolling defects,	04
	(c)	Explain about importance of Upper bound and Lower bound theorem in metal forming.	07
Q:2	(a)	Define the following terms: (i) Hot forming, (ii) Cold Forming, (iii) Flow Stress	03
	(b)	How Work hardening does affect the mechanical properties?	04
	(c)	Give short note on Two-Dimensional Mohr's circle method for stress analysis.	07
OR			
Q:3	(C)	Explain VonMises & Tresca theory of yielding.	07
	(a)	Explain clearance in sheet metal operation.	03
	(b)	Explain spring back effect in bending process.	04
	(c)	A cold roll sheet with 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
OR			
Q:3	(a)	Explain Forming Limit Diagram.	03
	(b)	Explain Anistrophy in sheet metal	04
	(c)	Explain typical arrangement of roll & roll mills with neat sketches.	07
Q:4	(a)	What do you understand by shear on punch and die?	03
	(b)	Explain Wire Drawing processes in brief.	04
	(c)	Explain various operations performed on sheet metal press machine.	07
OR			
Q:4	(a)	Define angle of bite and discuss its effect in rolling process.	03
	(b)	What are the benefits of hydrostatics extrusion process?	04
	(c)	Explain friction board drop hammer for forging	07
Q:5	(a)	Explain Blanking operation with neat sketch.	03
	(b)	State difference between compound and progressive dies.	04
	(c)	Discuss analysis of strip rolling derive equation for projected arc length.	07
OR			
Q:5	(a)	Differentiate direct and indirect extrusion process	03
	(b)	How is impression die forging different from closed die forging	04
	(c)	What is Drawability? List and Discuss factor Affecting to Drawability.	07
