

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (NEW) EXAMINATION – WINTER 2022****Subject Code:2171913****Date:03-01-2023****Subject Name: Metal Forming Analysis****Time:10:30 AM TO 01:00 PM****Total Marks:70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

	MARKS
Q.1 (a) Define 1)Yield strength 2)Strain Rate 3) Platicity	03
(b) Differentiate hot forming & cold forming	04
(c) Explain typical stress strain diagram for ductile material.	07
Q.2 (a) Explain Tresca theory of yielding in brief.	03
(b) How do you represent strain hardening effect?	04
(c) Explain two dimensional stresses with Mohr Circle Diagram.	07
OR	
(c) Explain Isotropic & Kinematic work hardening with neat sketch	07
Q.3 (a) Difference between closed die & open die forging.	03
(b) Why friction is necessary in forging process?	04
(c) Explain various forging operations with neat sketch.	07
OR	
Q.3 (a) What is upset forging?	03
(b) How impression die forging different from closed die forging?	04
(c) Explain friction board drop hammer for Forging.	07
Q.4 (a) Explain Roll chamber with neat sketch.	03
(b) Define angle of bite & discuss its effect in rolling.	04
(c) Explain typical arrangement of roll & roll mill.	07
OR	
Q.4 (a) Explain anisotropy in sheet metal.	03
(b) Explain forming limit diagram.	04
(c) Derive formula for Rolling load using slab method with usual notations.	07
Q.5 (a) Explain spring back effect in bending process.	03
(b) What do you understand shear on punch & die?	04
(c) Explain various operation performed by Press Machine.	07
OR	
Q.5 (a) Discuss material used for wire drawing die.	03
(b) Explain wire drawing process in brief.	04
(c) Explain hydrodynamic extrusion in wiredrawing with neat sketch.	07
