

Enrolment No./Seat No_____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VII (NEW) EXAMINATION – SUMMER 2024

Subject Code:3172510

Date:28-05-2024

Subject Name:Tool Engineering

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.
4. Simple and non-programmable scientific calculators are allowed.

	Marks
Q.1 (a) Explain the fool proofing with neat sketch.	03
(b) Enlighten the term: (i) Perforating (ii) Punching.	04
(c) Explain the concept, meaning and definitions of locating and clamping with suitable example.	07
Q.2 (a) Describe the following: - Tool design and Tool engineering.	03
(b) Explain any two factors influencing tool economy in brief.	04
(c) Write the classification of various types of clamping devices and locating devices.	07
OR	
(c) Explain the re-sharpening methods of following cutting tools: (A) Drill (B) Side milling cutter (C) End mill (D) Centre drill.	07
Q.3 (a) State different types of drawing dies and explain any two.	03
(b) What is clearance and how it is applied in punch and die.	04
(c) Explain the methods of reducing cutting forces in press operation.	07
OR	
Q.3 (a) Explain the stages of cutting operation in press tool design.	03
(b) Explain the strip layout with neat sketch.	04
(c) Describe different methods of mounting punches and dies with neat sketches.	07
Q.4 (a) Discriminate between jig and fixture.	03
(b) Classify, demonstrate the properties, and suggest the applications of the cutting tool materials	04
(c) Deliberate the design steps for jig and fixture.	07

OR

- Q.4** (a) Describe the V locator with neat sketch. **03**
(b) Enlighten 3-2-1 principle of location. **04**
(c) List the various types of locating devices used for both Jigs and Fixture and explain any two with neat sketch. **07**

- Q.5** (a) Describe the following terms. – (I). Extrusion. (II). Plastic injection. **03**
(b) Explain shear on punch and die. How is it applied to punch and die for blanking and piercing operation? **04**
(c) Describe in brief two pass layout in press work with suitable example. **07**

OR

- Q.5** (a) Conceptualize the shut height of press tool with suitable example. **03**
(b) Give the specific application of following cutting tool material. **04**
(i) HSS (ii) CBN and (iii) Diamond.
(c) Describe the design of progressive cutting die. **07**
