

Enrolment No./Seat No_____

GUJARAT TECHNOLOGICAL UNIVERSITY

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

Subject Code:3172510

Date:07-12-2024

Subject Name:Tool Engineering

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) Explain the tool design and tool engineering.	03
(b) Explain the tool engineering functions and importance to enhance productivity and quality.	04
(c) Write short note on re-sharpening methods of following cutting tools: Drill, Centre drill, type A and B and Gear hob.	07
Q.2 (a) Define clamping and locating	03
(b) Define the term: Fool proofing and ejecting.	04
(c) Explain the Tool holding and tool mounting systems for conventional milling and drilling machine tools.	07
OR	
(c) Explain the Tool holders for turning and milling carbide inserts tool.	07
Q.3 (a) Describe the concept of shut height of press tool with suitable example.	03
(b) Explain the clearance and how it is applied in punch and die.	04
(c) Describe following in concern with Cutting force: Methods to calculate and methods of reducing.	07
OR	
Q.3 (a) Enlist the different types of drawing dies and explain any one	03
(b) Explain the strip layout with neat sketch.	04
(c) Describe different methods to compute bending pressure.	07
Q.4 (a) Describe method to give shear angle on punch and die.	03
(b) What is shear on punch and die? How it is applied to punch and die for blanking and piercing operation?	04
(c) List the various types of locating devices used for both Jigs and Fixture and explain any two with neat sketch.	07

OR

- | | | | |
|------------|------------|--|-----------|
| Q.4 | (a) | Explain V locator with neat sketch. | 03 |
| | (b) | Discriminate between jig and fixture. | 04 |
| | (c) | Describe in detail the design steps for jig and fixture. | 07 |

- | | | | |
|------------|------------|---|-----------|
| Q.5 | (a) | Explain the stages of cutting operation in press tool design. | 03 |
| | (b) | Explain 3-2-1 principle of location. | 04 |
| | (c) | Write a note on Types, sketch, working and applications of drawing dies | 07 |

OR

- | | | | |
|------------|------------|---|-----------|
| Q.5 | (a) | Define the following terms: embossing, curling, bulging | 03 |
| | (b) | Describe the following terms. – (I). Blow moulding (II). Plastic injection. | 04 |
| | (c) | Write notes on Forging dies- terminology, sketch, working and applications | 07 |
