

GUJARAT TECHNOLOGICAL UNIVERSITY**BE – SEMESTER- VII EXAMINATION-SUMMER 2023****Subject Code: 3172510****Date: 28/06/2023****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 types of cutting tools used in machining process	03
	(b) Describe types of material used to manufacture tools	04
	(c) Explain importance of process planning in tool engg.	07
Q.2	(a) What is tool holding device? Explain in brief	03
	(b) Describe ISO designation of carbide tools	04
	(c) Explain tool sharpening methods in detail	07
	OR	
	(c) Describe different types of forces acting on single point cutting tool.	07
Q.3	(a) What do you mean by degree of freedom? Explain in brief	03
	(b) What is Jig? Explain its application with an example	04
	(c) Explain 3-2-1 principle of location with suitable example	07
	OR	
Q.3	(a) Describe steps in design of jigs.	03
	(b) Describe types of clamping devices with their applications	04
	(c) Draw neat sketch of box jig and explain it's components	07
Q.4	(a) Discuss types of press tool in brief	03
	(b) Describe importance of center of pressure in press tool	04
	(c) Draw neat sketch of compound die and explain it's components	07
	OR	
Q.4	(a) What is the function of pilot and stock stop?	03
	(b) Describe clearance in blanking operation with neat sketch	04
	(c) Prepare strip layout and explain stage wise operations in detail	07
Q.5	(a) What is optimization in sheet metal cutting?	03
	(b) Describe process of injection molding with an example	04
	(c) Explain the method to calculate cutting force in detail with an example	07
	OR	
Q.5	(a) Explain forging process and it's use in brief	03
	(b) Describe extrusion process to manufacture hollow tube	04
	(c) Explain different drawing operations in detail	07