

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-IV (NEW) EXAMINATION – SUMMER 2024****Subject Code:3142509****Date:03-07-2024****Subject Name: Manufacturing Technology -I****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) Differentiate between primary and auxiliary motions.	03
	(b) Enlist different types of chips produce during cutting operation. Explain anyone in details.	04
	(c) Draw single point cutting tool and explain tool signature as per ASA.	07
Q.2	(a) Name the operations which can be carried out on lathe machine.	03
	(b) Enlist various types of chucks use on lathe machine. Explain 3 jaw chuck in details.	04
	(c) Why merchant circle diagram is used for? Explain with neat sketch.	07
	OR	
	(c) Explain Hydraulic shaper mechanism and also discuss the quick return motion of Hydraulic shaper.	07
Q.3	(a) Classify the drills.	03
	(b) Write four major differences between shaper and slotter machine.	04
	(c) Explain (1) End Milling (2) Straddle milling (3) Gang milling operations with neat sketch.	07
	OR	
Q.3	(a) Differentiate Boring and Reaming process.	03
	(b) What is broaching? How broaches are classified?	04
	(c) Explain up-milling and down-milling process with neat sketch.	07
Q.4	(a) What is indexing? Why is it required?	03
	(b) Explain types of reamers.	04
	(c) Explain Centreless grinder with neat sketch.	07
	OR	
Q.4	(a) Explain various factors which are affecting tool life.	03
	(b) Explain trueing and dressing for grinding wheel.	04
	(c) State the factors to be considered for the selection of grinding wheel.	07
Q.5	(a) Explain the importance of back rack and end relief angles in a single point cutting tool	03
	(b) Draw twist drill.	04
	(c) Explain any one alignment test used in lathe machine.	07
	OR	
Q.5	(a) Sketch different elements of a broach.	03
	(b) Explain Taper turning by swiveling the compound rest method.	04
	(c) With the help of a neat sketch explain the column and knee type milling machine and name its main parts.	07
