Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V- EXAMINATION – SUMMER 2016

Subject Code: 152002 **Date: 21/05/2016**

Subject Name: Manufacturing Technology - I

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.**

Q.1	**(a)**	What are the differences between Engine lathe and Turret lathe?	**07**
	(b)	Explain in detail, the alignment tests of the lathe machine.	**07**
Q.2	**(a)**	Explain the turret indexing mechanism and bar feeding mechanism with neat sketch.	**07**
	(b)	Explain in detail: "Taylors gauging principle" with suitable sketch.	**07**
		OR	
	(b)	What is Tool Signature? Explain the single point cutting tool geometry with sketch.	**07**
Q.3	**(a)**	Suggest a method of taper turning of long work pieces and explain it.	**07**
	(b)	Explain various work piece holding devices of lathe machine.	**07**
		OR	
Q.3	**(a)**	Sketch and describe the twist drill nomenclature.	**07**
	(b)	Using schematic diagrams explain : (1) Counter boring (2) Counter sinking (3) Spot-facing (4) Trepanning.	**07**
Q.4	**(a)**	Explain jig boring machine in detail.	**07**
	(b)	Explain crank and slotted link quick return mechanism in a shaper.	**07**
		OR	
Q.4	**(a)**	Sketch a typical broach tooth profile and name its elements. Explain working of pull type and push type broaching.	**07**
	(b)	Explain the following milling operations with sketch. i. Plain milling operation. ii. Straddle milling operation. iii. Angular milling operation. iv. Face milling operation. v. Helical milling operation.	**07**
Q.5	**(a)**	Classify the milling machines. Explain principal parts of column & knee type horizontal milling machine with diagram.	**07**
	(b)	Differentiate between center type and center less grinding machines.	**07**
		OR	
Q.5	**(a)**	Explain standard marking system of grinding wheels. Discuss about its abrasive type and bond type.	**07**
	(b)	Describe different types of calipers used for measuring the linear dimensions.	**07**

****