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

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VI (NEW) - EXAMINATION – SUMMER 2016

Subject Code:2161909 **Date:06/05/2016**

Subject Name: Production Technology

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.**

Q.1	**(a)**	Explain types of chips that occur in metal cutting. Why is a built up edge on a tool is undesirable	**07**
	(b)	Enumerate the factors affecting tool life. Briefly explain the effect of each factor.	**07**
Q.2	**(a)**	Differentiate between orthogonal and oblique cutting. Draw merchant's force circle diagram for orthogonal cutting process. Give two examples of oblique cutting.	**07**
	(b)	The following relates to orthogonal turning o f a mild steel rod of 50 mm diameter. Feed 0.8 mm; chip thickness 1.2 mm; work rotational speed 70 rpm. Calculate chip thickness ratio (r), chip reduction ratio (K) and total length of chip removed per minute.	**07**
		OR	
	(b)	A round disk of 150-mm diameter is to be blanked from a strip of 3.2mm, half-hard cold rolled steel whose shear strength 310 MPa. Determine (a) the appropriate punch and die diameters, and (b) blanking force. Take clearance allowance for half-hard cold-rolled steel is 0.075.	**07**
Q.3	**(a)**	How the Presses are classified? Sketch and describe any one of it.	**07**
	(b)	What are the methods by which cutting fluids are applied in a machining operation? Explain EP method.	**07**
		OR	
Q.3	**(a)**	Differentiate between bartype and chucking type automats	**07**
	(b)	Explain the degree of freedom of a workpiece located in a space with a neat sketch. Analyze the Location of a Cylinder on a Vee Block.	**07**
Q.4	**(a)**	What are automatic transfer machines? Write principle, advantages and disadvantages of it.	**07**
	(b)	Explain with a neat sketch the Mechanical type of lathe tool dynamometer.	**07**
		OR	
Q.4	**(a)**	List the various types thread manufacturing methods. And explain thread grinding.	**07**
	(b)	Name several techniques for determining tool chip contact temperature. Describe the Tool/work thermocouple method of measuring temperatures	**07**

Q.5	**(a)**	Write the difference between AJM and 'AWJM processes from the view point of working principle, application & limitations.	**07**
	(b)	Explain “Principle of location” in detail.	**07**

OR

Q.5	**(a)**	What do you mean by MMR in unconventional machining? How this MMR is affected by various parameters in abrasive jet machining?	**07**
	(b)	Write short note on any two i) LBM ii) USM iii) ECM	**07**

****