Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI • EXAMINATION - SUMMER 2013

	Subject Code: 161504 Date: 03-06-2013 Subject Name: Metal Cutting and Advanced Manufacturing Processes			
Tim	-	0.30 am - 01.00 pm Total Marks: 70		
	1. 2.	Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.		
Q.1	(a)	Discuss and Construct Merchantos circle diagram, with standard nomenclature.	07	
	(b)	Discuss NC system. Discuss Open and closed system.	07	
Q.2	(a) (b)	Discuss chip reduction coefficient and the effect of cutting variables on it. Draw, Discuss and differentiate orthogonal cutting and oblique cutting. OR	07 07	
	(b)	What are Jigs and fixtures used for? Discuss principles of location for jig and fixture design.	07	
Q.3	(a) (b)	What is the concept of economics of metal cutting? Describe. Discuss working principle, process characteristics, application, and limitations of Electro-chemical machining (ECM) process. OR	07 07	
Q.3	(a) (b)	Discuss various tool room functions. Discuss the effects of cutting fluid on machining.	07 07	
Q.4	(a)	Discuss machinability and the factors affecting evaluation of machinability of metal.	07	
	(b)	Describe electro chemical grinding process in detail. OR	07	
Q.4	(a) (b)	Write note on advanced cutting tool materials. Compare CNC and DNC system.	07 07	
Q.5		Discuss calculation of the work done and power required in metal cutting? Discuss Electro Magnetic forming process with its working principle, application, advantages and limitations. OR	07 07	
Q.5	(a)	Define tool life. Discuss the effects of various tool angles on tool wear and tool life.	07	
	(b)	Write note on Hydro forming process.	07	
