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

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V (NEW) - EXAMINATION – SUMMER 2017

Subject Code: 2152507 **Date:27/04/2017**

Subject Name:Tool Engineering

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.**

			MARKS
Q.1		**Short Questions**	**14**
	1	Define "Blanking" operation.	
	2	Define broaching allowance.	
	3	Name various types of Cutting Fluids.	
	4	Give selection parameters for Cutting Tool materials.	
	5	Define Deep Drawability.	
	6	Name the factors that contribute to flank wear.	
	7	Name the two systems of tool designation.	
	8	Write a Taylor's tool life equation.	
	9	Where Crater wear is occurs?	
	10	What is 18-4-1 steels means?	
	11	What is the full form of CBN?	
	12	Write the types of chips.	
	13	Define the press tool.	
	14	Define the fixture.	
Q.2	**(a)**	Explain cutting ratio.	**03**
	(b)	List types of cutting tool materials & explain any one.	**04**
	(c)	Explain nomenclature of twist drill with neat sketches.	**07**
		OR	
	(c)	Discuss methods of reducing cutting forces in Press Operation.	**07**
Q.3	**(a)**	What is strip layout? Discuss with neat sketch.	**03**
	(b)	Explain fool proofing with neat sketch.	**04**
	(c)	Define press tool and explain press tool terminology with neat sketch.	**07**
		OR	
Q.3	**(a)**	Difference between mechanical and hydraulic press tool.	**03**
	(b)	Explain the heat generation in machining with neat sketch.	**04**
	(c)	Explain different method of mounting punches and dies with neat sketches.	**07**
Q.4	**(a)**	Write the essential requirement of jigs and fixture.	**03**
	(b)	Explain the characteristics that cutting tool materials possess.	**04**
	(c)	Explain merchant circle diagram with neat sketch and state its assumption.	**07**
		OR	
Q.4	**(a)**	Write the criteria for cutting tool material selection.	**03**
	(b)	Explain center of pressure with suitable example.	**04**
	(c)	Explain the mechanism of chip formation and discuss the types of chips with neat sketch.	**07**

Q.5	**(a)**	Discuss importance of Tool Design in Process Planning.	**03**
	(b)	List & explain types of cutting fluids.	**04**
	(c)	Discuss methods of reducing cutting forces in Press Operation.	**07**

OR

Q.5	**(a)**	State design principles for location purpose.	**03**
	(b)	What is strip layout? Discuss with neat sketch.	**04**
	(c)	Define the broach and Discuss following term with reference to broach :- (I) Rake & relief angles, (II) Depth of cut per tooth, (III) width of land, (IV) depth of cutting tooth.	**07**

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