Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME – SEMESTER II (NEW) – • EXAMINATION – SUMMER 2016

Subject Code: 2720816 **Date: 31/05/2016**

Subject Name: Design for manufacturing and assembly

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 geometric characteristics of part features and the associated types of tolerances.	**07**
	(b)	Define tolerance stack up. How tolerance stack up process is followed?	**07**
Q.2	**(a)**	What is design for manufacturing? Draw a flow chart for DFM process.	**07**
	(b)	Show relationship between attainable tolerance grades and different machining.	**07**
		OR	
	(b)	How to perform a worst case tolerance stack up? Illustrate with an example.	**07**
Q.3	**(a)**	Which are the factors affecting form design? Discuss any two in detail.	**07**
	(b)	Explain redesign of castings based on parting line considerations.	**07**
		OR	
Q.3	**(a)**	Enlist factors which may influence the manufacturing method. Discuss any two in detail.	**07**
	(b)	How does material and method of production influence on form design?	**07**
Q.4	**(a)**	Explain principle of forging. Compare hammer and drop forging.	**07**
	(b)	Explain design for accessibility and design for ease in assembly.	**07**
		OR	
Q.4	**(a)**	Explain three DFMA criteria for retaining components for redesign of a product.	**07**
	(b)	Explain design for machinability.	**07**
Q.5	**(a)**	Express your views to redesign a product to improve its environmental impact. Discuss any two in detail.	**07**
	(b)	Justify "DFMA as the tool for concurrent engineering"	**07**
		OR	
Q.5	**(a)**	State general guidelines for manual assembly: Part handling, Insertion and Fastening	**07**
	(b)	What do you mean by Poka Yoke? Write seven steps to be followed for Poka Yoke attainment.	**07**

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