Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER– II(New course) • EXAMINATION (Remedial) – WINTER- 2015

Subject Code: 2720822 **Date: 14/12/2015**

Subject Name: CAD/CAM SYSTEMS

Time:2:30 pm to 5:00 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)**	Draw a product life cycle diagram along with its various phases. Differentiate synthesis and analysis in context of product design with explanation of CAD tools used in each phase.	**14**
	(b)		**07**
Q.2	**(a)**	Attempt the following: 1. Illustrate technical specifications of a typical CAD workstation. 2. Using a block diagram clearly show the configuration of a graphics software.	**07**
	(b)	Discuss: Raster scan and Frame Buffer	**07**
		OR	
	(b)	Distinguish Between Conventional Design and Computer Aided Design system with CAD architecture	**07**
Q.3	**(a)**	Differentiate between CSG and b-rep schemes of solid representation. Highlight the role of Boolean operations in CSG.	**14**
		OR	
Q.3	**(a)**	Derive transformation matrix of right view for orthographic projections.	**07**
	(b)	Explain 3-D geometric transformations (any three) in detail.	**07**
Q.4	**(a)**	What is conventional and optimum design? Explain it with suitable examples. State the application optimization in engineering. List the optimization software	**07**
	(b)	Explain, in detail, the procedure from CAD to actual machining during CNC machining.	**07**
		OR	
Q.4	**(a)**	Discuss the scope of application of CNC technology in CAD/CAM systems.	**07**
	(b)	Discuss the various features of an advanced CNC machining centre.	**07**
Q.5	**(a)**	Differentiate DC shunt motor and 3 phase induction motor in terms of their working principle, applications, advantages and limitations.	**07**
	(b)	Enlist the auxiliary statements used in APT language. Explain with suitable Examples any five auxiliary commands.	**07**
		OR	
Q.5	**(a)**	Discuss the essential functions of DNC in addition to what NC/CNC machine tools provide.(any seven)	**07**

(b) ‘An AGVS provides a versatile material handling system to complement the flexibility of the FMS’, Justify the statement. **07**