Seat No.:	Enrolment No.

Subject Code: 161903

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI • EXAMINATION - WINTER • 2014

Date: 01-12-2014

Subject Name: COMPUTER AIDED DESIGN Time: 02:30 pm - 05:00 pm Instructions: Total Mark		: 70	
		Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.	
Q.1	(a) (b)	Explain wireframe modeling in detail. Compare it with solid modeling. Give your Comments on the need for standardization in Computer Graphics. Briefly discuss about various graphics standards available.	07 07
Q.2	(a)	Explain the concepts of FEM. Discuss the different steps involved in FEA indetailed.	07
	(b)	What are different types of geometric technique available? Describe the common facilities available in a solid modeling package. OR	07
	(b)	Reflect the diamond shape polygon whose vertices are A(-3,0), B(0,-2), C(3,0), D(0,2) about an arbitrary line L which is represented by equations $y=0.5x+1$.	07
Q.3	(a)	With neat sketch explain the characteristics of Bezier curve and mention its advantages.	07
	(b)	Describe the structure of an IGES file and compare IGES and PDES. OR	07
Q.3	(a) (b)	Explain DDA algorithm for generation of line. Explain the CAD of helical compression spring using flow chart.	07 07
Q.4	(a)	A triangle ABC with vertices $A(30,20)$, $B(90,20)$ and $C(30,80)$ is to be scaled by factor 0.5 about a point $X(50,40)$. Determine (i) the composition matrix and (ii) the coordinates of the vertices for a scaled triangle.	07
	(b)	Explain Penalty approach and Elimination approach for FEA. OR	07
Q.4	(a) (b)	Discuss in detail about the applications of optimization in engineering. What are the different types of Elements? Explain their characteristic and importance.	07 07
Q.5	(a) (b)	Explain Johnson method of optimum design with an example. What do you mean by compatible and incompatible problem in optimum design? Explain.	07 07
0.5		OR	^ -
Q.5	(a) (b)	Compare CSG and B-rep techniques of solid modeling. What do you mean by primary and subsidiary design equation? Explain with example.	07 07
