

GUJARAT TECHNOLOGICAL UNIVERSITY
PDDC - SEMESTER-VI • EXAMINATION – SUMMER 2014

Subject Code: X61901**Date: 03-06-2014****Subject Name: Computer Aided Design****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) What are the techniques used in computer graphics for the generation of picture on CRT screen? How do you obtain color pictures on the screen? **07**
 (b) What is parametric representation? Give a parametric representation of line having points (5, 4) and (10,10) end points **07**
- Q.2** (a) What are the advantages of homogeneous coordinate system? Find out the transformed coordinates of a plane triangular lamina having the vertices (3, -1), (4, -1) and (2, 1) rotated through 90 degree about the origin in counter clockwise direction. **07**
 (b) Scan convert a circle whose centre is at (10, 20) and radius is 10 units. Write also the algorithm. **07**
- OR**
- (b) Differentiate between interpolation and approximation method for generating control points of splines. **07**
- Q.3** (a) Describe constructional solid geometry with suitable examples. **07**
 (b) Discuss CAD standards **07**
- OR**
- Q.3** (a) Explain Boundary representation techniques for solid modeling **07**
 (b) What is Data Structure. Explain how it is useful to CAD **07**
- Q.4** (a) Explain the following surface modeling techniques **07**
 (i) Coons patch (ii) Tabulated surface
 (b) Discuss objective function and constraints in optimization of design problem **07**
- OR**
- Q.4** (a) Explain spatial partitioning representation with suitable example. **07**
 (b) Distinguish between engineering design and optimum design **07**
- Q.5** (a) Discuss different types of Elements used in Fem with degree of freedom. **07**
 (b) Explain procedure for FEM for simple component of your choice **07**
- OR**
- Q.5** (a) Discuss: CAD/CAM Interfacing. **07**
 (b) Discuss different analysis carried out by CAD analysis software **07**
