Seat No.:	Enrolment No.

Subject Code: 710802N

GUJARAT TECHNOLOGICAL UNIVERSITY ME SEMESTER – I (OLD) EXAMINATION – SUMMER 2017

Subject Name: Computer Aided Machine Design Time: 02:30 P.M. to 05:00 P.M. **Total Marks: 70 Instructions:** 1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks. (a) Discuss the various applications of computer aided machine design in 07 **Q.1** Engineering field. **(b)** Write an algorithm and a C program to scan convert a line with slope m > 107 using Bresehnam's Algorithm. (a) Differentiate clearly between conventional design and computer aided **Q.2** 07 machine design. (b) Explain Graphics display terminal.` 07 OR **(b)** Explain Bezier curves and B-spline curve. 07 (a) Explain 2 Dimensional geometric transformations. 0.3 07 **(b)** Describe the types of geometric models 07 OR (a) Explain hermite cubic spline curve 07 0.3 **(b)** Explain the mentioned representation schemes for solid models 07 1. Constructive solid geometry 2. Boundary representation Write down c program for design of helical spring. 07 **Q.4** (a) Define an optimization and write it's engineering application 07 **(b)** OR Consider the triangle ABC with vertices A(1,3) B(-1,4) and C(-1,2) is rotated 0.4 (a) **07** through 90° and then 180° clockwise. Determine the vertices after doing the above 2 dimensional rotation. **(b)** Explain johnson's method of optimum design 07 (a) Using transformation matrix determines the new coordinates of triangle **Q.5 07** A(0,0),B(3,2) and c(2,3) after it is rotated 45 degree clockwise about origin. (b) Write down Implementation and Applications of CAD **07** OR Explain explicit form and non implicit form of non parametric representation. Q.5 **07** (b) Differentiate clearly between conventional design and computer aided **07** machine design.

Date:09/05/2017