

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI (NEW) - EXAMINATION – SUMMER 2018

Subject Code:2162006

Date:05/05/2018

Subject Name:Computer Aided Design for Mechatronics

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 do you mean by CAD/CAM? Application of it. **03**
(b) What is Printers? Enlist Printers. Explain any one of them. **04**
(c) Explain DDA algorithm for generation of Circles. **07**

- Q.2** (a) Give Specification of Workstations. **03**
(b) Draw the product Cycle with CAD/ CAM. **04**
(c) State difference between Raster scan & Vector scan Display. **07**

OR

- (c) What is Graphic Standard? Enlist them. Explain any one of them. **07**
- Q.3** (a) Give Limitation of Non –parametric representations of curve. **03**
(b) Write a short note on CSG. **04**
(c) Generate a straight Line connecting two points (1, 2) & (8.6) using DDA algorithm **07**

.OR

- Q.3** (a) What is different software packages used in CAD? **03**
(b) What are Geometric transformations? State any two advantages of Homogenous coordinate transformations. **04**
(c) A rectangle is formed by four points whose coordinates are : A (50,50) , B(100,50) , C(100,80), & D(50,80). Determine the coordinates if four points for new rectangle in reduced size using the scaling factors 0.5 & 0.6 along X & Y directions respectively. **07**

- Q.4** (a) Comparison of Analytic curves & Synthetic curve. **03**
(b) How Hermit cubic spline curves are differing from Bezier curve. **04**
(c) The vertices of a Bezier polygon are: (2, 2), (3, 4), (4, 4) & (5, 4) respectively .Determine four points on Bezier Curve. **07**

OR

- Q.4** (a) Explain the feature based modeling with suitable examples. **03**
(b) What do you mean by Optimum Design? Explain objectives of Optimum Design. **04**
(c) Explain with suitable example, the different type of equations used in Optimization. **07**

- Q.5** (a) What do you mean by Geometry & Topology? **03**
(b) What is geometric Modeling? Enlist them. Differentiate them. **04**
(c) Generate a Bezier curve using the control points : (2,0) , (4,3), (5,2), (4,-2), (5, 3) & (6,-2). **07**

OR

- Q.5** (a) Explain the property of Bezier curves. **03**

- (b) Explain the following entities used in surface modeling **04**
(1) Plain surface (2) Tabulated surface
- (c) What is design optimization? Explain its application in engineering **07**

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