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**E Reg. No. :**

**Question Paper Code: 51P11**

M.E. DEGREE EXAMINATION, NOV 2017

First Semester

CAD / CAM

15PCD101 - COMPUTER APPLICATIONS IN DESIGN

(Regulation 2015)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART - A (5 x 20 = 100 Marks)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1. | (a) | (i) Differentiate between Bezier and B - spline surface with  reference to number of control points, order of continuity  and surface normal. | CO-1 App | (10) |
|  |  | (ii) Explain the engineering application of cubic splines. | CO-1 App | (10) |
|  |  | Or |  |  |
|  | (b) | Find out the coordinates of the circle with radius 12 *cm*, using midpoint circle algorithm. | CO-1 App | (20) |
|  |  |  |  |  |
| 2. | (a) | Describe various commonly used primitives for solid modeling and explain the Boolean operations. | CO-2 U | (20) |
|  |  | Or |  |  |
|  | (b) | Classify the edges of the solid model given below using Dive and Conquer paradigm. | CO-2 U | (20) |
|  |  |  |  |  |
| 3. | (a) | (i) What is meant by clipping? | CO-3 U | (4) |
|  |  | (ii) Explain the various transformations in computer graphics for  2 Dimensional objects? | CO-3 U | (16) |
|  |  | Or |  |  |
|  | (b) | (i) Briefly explain polygon clipping. | CO-3 U | (4) |
|  |  | (ii) With example explain Sutherland-Cohen algorithm for two  dimensional clipping | CO-3 U | (16) |
|  |  |  |  |  |
| 4. | (a) | (i) What is Window to View port Transformation. | CO-4 U | (10) |
|  |  | (ii) A point (50,50) in WCS having minimum and maximum  coordinates as (Xw min, Ywmin) = (0,0)  (Xw max, Ywmax) = (100,100). Find the new Coordinates in  VCS having minimum and maximum coordinates as  (Xv min, Yvmin) = (20,20) (Xv max, Yvmax) = (60,60) | CO-4 U | (10) |
|  |  | Or |  |  |
|  | (b) | (i) What is meant by combined Transformation? | CO-4 U | (4) |
|  |  | (ii) Explain about the Bezier curves and its utility in CAD  modeling | CO-4 U | (16) |
|  |  |  |  |  |
| 5. | (a) | Briefly explain the top-down assembly approach for the given part diagrams. | CO-5 Ana | (20) |
|  |  | Or |  |  |
|  | (b) | (i) What is meant by scaling? | CO-5 U | (4) |
|  |  | (ii) Explain Sutherland- Hodgeman Polygon Clipping | CO-5 U | (16) |
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