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Question Paper Code: 52111

M.E. DEGREE EXAMINATION, DECEMBER 2015

First Semester

CAD / CAM

15PCD101 - COMPUTER APPLICATIONS IN DESIGN

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 3 = 15 Marks)

1. Why origin point is invariant under a general 2 x 2 transformation?
2. What are the neutral file translators?
3. What is visual realism? List the techniques used for visual realism.
4. What are the various animation techniques developed to simulate the mechanism?
5. What are the benefits of feature based modeling?

PART - B (5 x 14 = 70 Marks)

6. (a) Explain the following transformation in 2D & 3D concept of computer graphics with individual examples.
 - (i) Translation
 - (ii) Scaling
 - (iii) Rotation.

(14)

Or

- (b) (i) Differentiate between Bezier and B - spline surface with reference to number of control points, order of continuity and surface normal.

(7)

(ii) Explain the engineering application of cubic splines. (7)

7. (a) Describe various commonly used primitives for solid modeling and explain the Boolean operations. (14)

Or

(b) What are the needs for graphic standards? Explain in detail. (14)

8. (a) (i) Describe an algorithm for the removal of hidden lines. (7)

(ii) Compare the techniques of Phong shading and Gouraud Shading. (7)

Or

(b) (i) Differentiate the parametric geometry modeling and variational geometry modeling. (7)

(ii) List and explain standard tool bars available in any solid modeling packages. (7)

9. (a) Explain the purposes of assembly models in CAD systems. (14)

Or

(b) (i) Explain the worst case arithmetic method for tolerance analysis. (7)

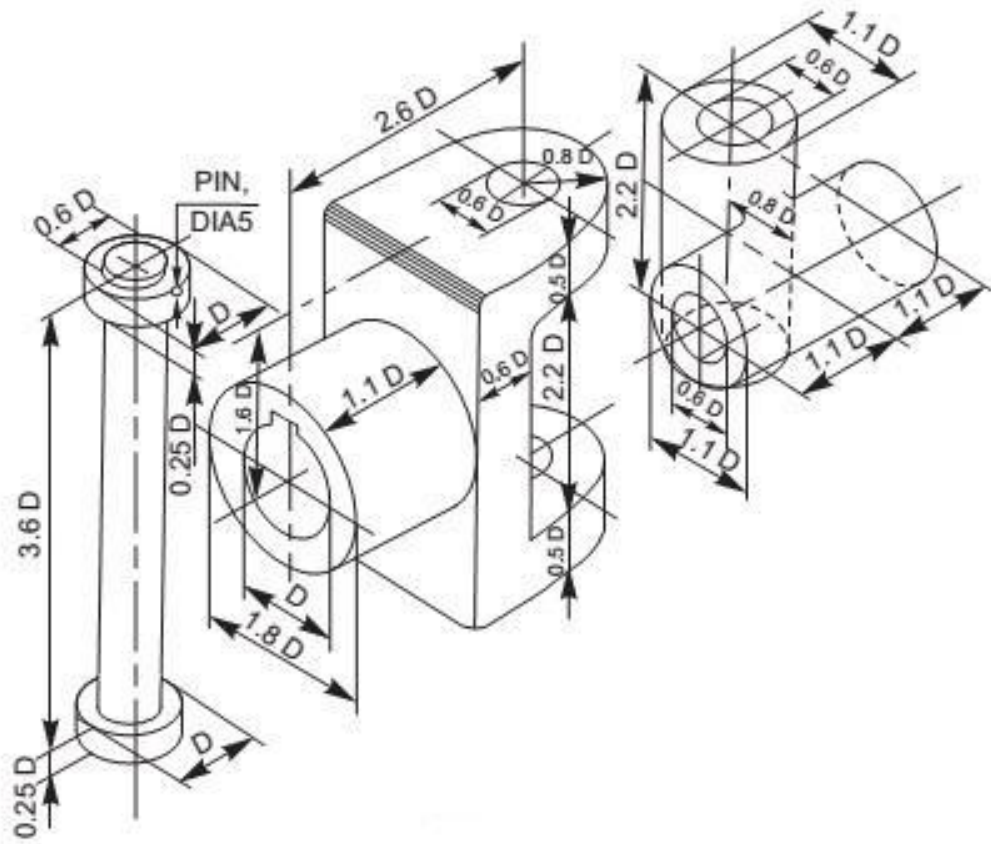
(ii) Discuss how the surface area is calculated using CAD software. (7)

10. (a) (i) How can users set the desired model behavior for its future modifications? (7)

(ii) Describe the procedure of conceptual design for any industrial/consumer product? (7)

Or

(b) Briefly explain the top-down assembly approach for the given part diagrams. (14)



PART - C (1 x 15 = 15 Marks)

11. (a) Check your CAD system. Which solid modeling approach does it support: the primitives approach, the features approach, or both? (15)

Or

- (b) Outline the procedure of finite element modeling and analysis on the given model (Use ANSYS FEM Package). (15)

