M.E. DEGREE EXAMINATIONS: JUNE 2011

Second Semester

CAD/CAM

CCM 507: Computer Applications in Design

Time: Three Hours   **Maximum Marks: 100**

Answer ALL Questions:-

PART A (10 x 2 = 20 Marks)

1. What is composition transformation matrix?

2. Give the transformation matrix that rotates an object point about the origin by θ.

3. What is meant by ruled surface and tabulated cylinder in surface models?

4. What are the major differences between the Bezier curve and the cubic spline curve?

5. List various types of color models in CAD system.

6. What is meant by sorting operation in visibility algorithm?

7. What is meant by tolerance accumulation?

8. What is meant by mass property calculation?

9. What are the types of modeling data that has to be transferred by data exchange standard?

10. What are the error sources while processing IGES files?

PART B (5 x 16 = 80 Marks)

11. a) Briefly explain Bresenhams line drawing algorithm and write the steps to scan convert a line with slope m≤1.

(OR)

b) Briefly explain Cohen Sutherland algorithm for polygon clipping.

12. a) Describe the parametric representation of B-spline curve and list the summary of the characteristics of B-spline curve.

(OR)

b) Briefly describe the constructive solid geometry scheme to create solid models.

13. a) Write a note on minimax test, containment test, surface test and edge intersections visibility techniques.

(OR)

b) Briefly describe the steps involved in area oriented algorithm for hidden edge/ face interactions removal.

14. a) Describe location graph and virtual link representation scheme of assembly data structure in assembly modeling.

(OR)

 b) (i) Describe the generation of D & T model with the diagram. (8)

   (ii) Briefly describe the steps involved in creating an animated film by conventional animation? (8)

15. a) (i) Briefly explain the general structure of IGES file. (8)

   (ii) Describe the various testing methods of IGES processor. (8)

(OR)

 b) (i) Discuss the requirements of product data exchange between dissimilar CAD/CAM systems. (8)

   (ii) Describe the evolution of shape based data exchange format. (8)

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