

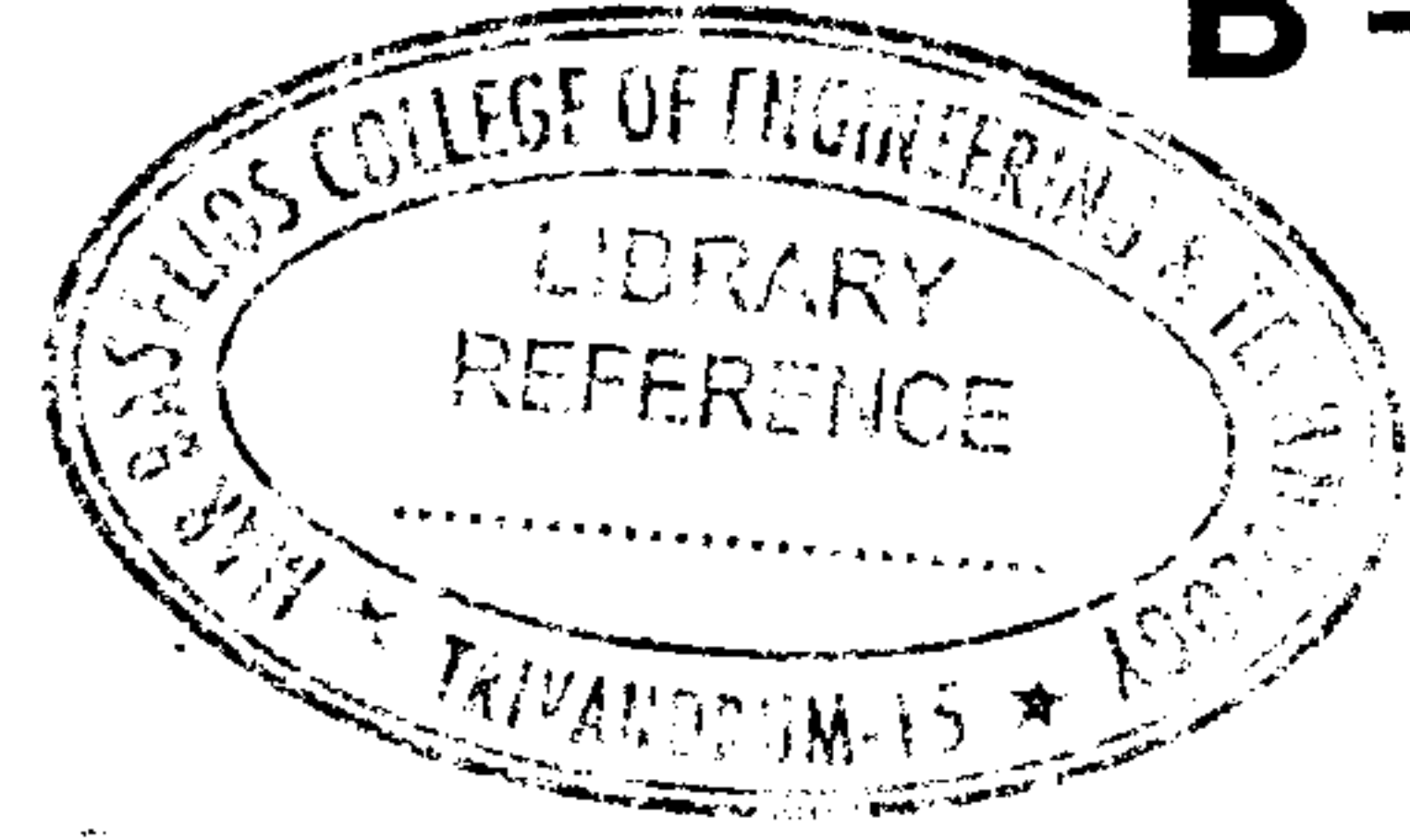


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**B – 5946**

Reg. No. : .....

Name : .....



**Sixth Semester B.Tech. Degree Examination, April 2017  
(2013 Scheme)**

**13.603 : COMPUTER AIDED DESIGN (MPU)**

Time : 3 Hours

Max. Marks : 100

**PART – A**

Answer **all** questions. **Each** question carries **2** marks.

**(10×2=20 Marks)**

1. What is CAD/CAM ?
2. Draw the flow chart for implementation of a typical CAD process on a CAD/CAM system.
3. What are the advantages of solid modeling ?
4. What are the major application areas of computer graphics ?
5. Write a short note on inverse transformation.
6. What is homogeneous representation ?
7. What is line clipping ?
8. What do you mean by a projection ?
9. Write the steps involved in FEM.
10. What is isoparametric formulation ?

P.T.O.



## PART – B

Answer **any one full** question from **each** Module.**(4×20=80 Marks)****Module – 1**

11. A) Discuss the applications of CAD/CAM. 10  
B) Explain surface models with suitable example. 10
12. A) Compare the different techniques used in solid modeling. 10  
B) Explain B-rep technique with suitable example. 10

**Module – 2**

13. Explain midpoint circle algorithm. 20
14. Find the transformation matrix that transforms the square ABCD whose center is at (2, 2) is reduced to half of its size, with center still remaining at (2, 2). The coordinates of square ABCD are A (0, 0), B (0, 4), C (4, 4) and D (4, 0) find the coordinates of new square and plot the sketches of each transformation. 20

**Module – 3**

15. Explain Cohen Sutherland clipping algorithm. 20
16. A) Use the Cohen Sutherland to clip the line  $P_1$  (70, 20) and  $P_2$  (100, 10) against a window lower left hand corner (50, 10) and upper right hand corner (80, 40) 10  
B) Explain orthographic and oblique projections in detail. 10

**Module – 4**

17. A) Derive the shape functions for the ID bar element in natural coordinates. 10  
B) Derive the stiffness matrix for the ID bar element. 10
18. A) Derive the body force load vector for ID linear bar element. 10  
B) What are convergence requirements? Discuss three conditions for convergence requirements. 10
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