

Reg. No.

**Question Paper Code : 71397**

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2015.

Seventh Semester

Computer Science and Engineering

CS 2401/CS 71/10144 CS 702 — COMPUTER GRAPHICS

(Common to Information Technology)

(Regulation 2008/2010)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Identify the contrast between Raster and Vector Graphics.
2. What is 'Shear' Transformation?
3. What is 'Mesh Modeling'?
4. Draw the 3D Viewing pipeline.
5. Give the code snippet for setting up a coordinate system in OpenGL.
6. Mention the uses of chromaticity diagram.
7. What is 'Flat shading'?
8. What are the two types of textures applied on surfaces?
9. What is a 'Koch Curve'?
10. What is CSG technique?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Summarize Midpoint Circle drawing procedure. (8)  
(ii) Use the above procedure to compute points on a circle with centre at (5,5) and radius of 8 units. (8)
- Or
- (b) (i) Rotate a triangle [(4,6), (2,2), (6,2)] about the vertex (4,6) by 180° CCW and find the new vertices. (8)  
(ii) Prove that Reflection is equal to Rotation by 180°. (8)

12. (a) (i) Write short notes on 3D transformations. (8)  
(ii) Present any simple method for visible surface detection. (8)

Or

- (b) Describe projection transformations in 3D. (16)
13. (a) Describe about the most commonly used color models used in Computer Graphics. (16)

Or

- (b) (i) Write short notes on techniques for Computer Animation. (8)  
(ii) Write code snippet for drawing basic 2D primitives in OpenGL. (8)
14. (a) (i) How are diffuse and specular components computed in a shading model. (8)  
(ii) Write about Gouraud and Phong shading techniques. (8)

Or

- (b) (i) How are shadows created using textures? Discuss. (8)  
(ii) Present a brief discussion on 'Reflection Mapping'. (8)
15. (a) (i) How are Peano curves produced? Give examples. (8)  
(ii) Write short notes on Mandelbrot sets. (8)

Or

- (b) Describe the process of Ray Tracing. Explain how it is used to create Reflections and Transparency. (16)