

Total No. of Printed Pages:2

SUBJECT CODE NO:- H-279
FACULTY OF SCIENCE AND TECHNOLOGY
S.E. (CSE/IT)
Computer Graphics
(REVISED)

[Time: Three Hours]

[Max.Marks: 100]

Please check whether you have got the right question paper.

- N.B
- i. Q.No.1 from section A and Q.No.6 from section B are compulsory.
 - ii. Attempt any two questions from the remaining questions in each section
 - iii. Assume suitable data, if necessary.
 - iv. Figures to the right indicate full marks.

Section A

- | | | |
|-----|---|----------|
| Q.1 | Attempt any five: | 10 |
| | <ol style="list-style-type: none"> 1) Define random scan, raster scan displays. 2) What is aspect ratio? 3) Distinguish between convex & concave polygon. 4) Define frame buffer. 5) How to draw parallel lines using OpenGL? 6) What is animation? 7) Enlist application of computers graphics. 8) Define API. | |
| Q.2 | <ol style="list-style-type: none"> a) What is display list? Give suitable example in OpenGL. b) Rasterize the line with end points (2, 3) (12, 8) using DDA line algorithm. | 08
07 |
| Q.3 | <ol style="list-style-type: none"> a) Write OpenGL code to draw following primitives- <ol style="list-style-type: none"> i. Line loop ii. Polygon b) With neat block diagram explain display processor. | 08
07 |
| Q.4 | <ol style="list-style-type: none"> a) Write down & explain midpoint circle algorithm. b) How to define menu in OpenGL? Give suitable example. | 08
07 |
| Q.5 | Where short notes on (any three) | 15 |
| | <ol style="list-style-type: none"> 1. Logical classification of i/p devices. 2. RGB color model. 3. Flood fill algorithm. 4. GUI in OpenGL. 5. Major areas of concern in the application of computer graphics. | |

Section B

- Q.6 Attempt any five. 10
- 1) What is GLU & GLUT?
 - 2) What do you mean by co-ordinate system?
 - 3) Define pivot point for rotation.
 - 4) What is viewing?
 - 5) Define composite transformation.
 - 6) What is orthographic projection?
 - 7) What is visible surface determination?
 - 8) Differentiate uniform & differential scaling.
- Q.7 a) With example explain the terms- 08
- i) Projection
 - ii) Center of projection
 - iii) Direction of projection
- b) Explain how rotation, translation & scaling is considered in OpenGL. 07
- Q.8 a) Prove that multiplication of transformation matrices for two successive rotations is commutative. 08
- b) Define window and viewport, also derive window to viewport transformation. 07
- Q.9 a) Clip a line between $P_1(70,20)$ & $P_2(100,40)$ using Cohen-Sutherland algorithm against a window with lower left corner (50, 10) and upper right corner (80, 40). 08
- b) Explain Z- buffer algorithm. 07
- Q.10 Write short note on (any three) 15
- 1) Back face removal.
 - 2) Viewing in computer graphics.
 - 3) Homogenous co-ordinates
 - 4) Clipping operations.
 - 5) Computer imaging.