

Code No: MC1625/R16

MCA II Semester Regular Examinations, May-2017

COMPUTER GRAPHICS

Time: 3 Hours

Max. Marks: 60

*Answer Any FIVE Questions
All Questions Carry Equal Marks*

1. a Compare and contrast between raster-scan and random scan systems. [6M]
b Discuss the functioning of different graphical input devices. [6M]
2. a Describe the DDA algorithm for scan converting a line whose slope is between 45^0 and -45^0 . [6M]
b List the basic transformations which cause the physical distortion in the transformed object. [6M]
3. a Explain the approaches followed in different line clipping algorithms. [6M]
b Determine whether the vector joining the points A (5,7), B (10,8) intersects the line segment P(1,4) Q(20,4) using the Sutherland-Hodgeman algorithm. If intersects, find the coordinates of intersection point. [6M]
4. a What is the organization of control points followed in Bezier's method to ensure second order continuity? [6M]
b Demonstrate that B-spline curve follows local control. [6M]
5. a Derive the matrix form for perspective projection transformation using 3D homogenous representation. [6M]
b Discuss the significance of edge coherence in depth-buffer algorithm. [6M]
6. a Given points P (1, 2, 0), P (3, 6, 20) P (2, 4, 6) and a view point C (0, 0, -10), determine which points obscure the others when viewed from C. [6M]
b Explain the procedure followed for back face detection. [6M]
7. a Write an algorithm for generating a quad tree representation for the visible surfaces of an object by applying the area subdivision tests to determine the values of the quad tree elements. [6M]
b Discuss the characteristics of key-frame animation. [6M]
8. a What is the mechanism followed for tracking live action in animated scenes? Explain. [6M]
b Explain the graphical languages followed to achieve animation. [6M]