

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 45⁰ [6M] and -45° . b List the basic transformations which cause the physical distortion in the transformed [6M] object. 3. a Explain the approaches followed in different line clipping algorithms. [6M] Determine whether the vector joining the points A (5,7), B (10,8) intersects the line [6M] segment P(1,4) Q(20,4) using the Sutherland-Hodgeman algorithm. If intersects, find the coordinates of intersection point. What is the organization of control points followed in Bezier's method to ensure 4. a [6M] second order continuity? Demonstrate that B-spline curve follows local control. [6M] 5. a Derive the matrix form for perspective projection transformation using 3D [6M] homogenous representation. 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), [6M] determine which points obscure the others when viewed from C. 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 [6M] of an object by applying the area subdivision tests to determine the values of the quad tree elements. b Discuss the characteristics of key-frame animation. [6M] 8. a What is the mechanism followed for tracking live action in animated scenes? [6M] Explain. b Explain the graphical languages followed to achieve animation. [6M]

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