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Code No: 814AW

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
MCA IV Semester Examinations, August - 2017
COMPUTER GRAPHICS

Time: 3 Hours **Max. Marks: 60**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 20 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 8 marks and may have a, b, c as sub questions.

PART - A

5 × 4 Marks = 20

1.a) Describe the working of raster scan Systems. [4]
b) Explain about the homogeneous coordinate system. [4]
c) Give the properties of B-Spline curves. [4]
d) Briefly explain about composite transformations. [4]
e) What are the advantages of BSP Tree methods? [4]

PART - B

5 × 8 Marks = 40

2. Consider a raster display system with resolution of 600 by 300. How many pixels could be accessed per second by a display controller that refreshes the screen at the rate of 80 frames per second? [8]

OR

3. Describe briefly Bresenham's circle drawing algorithm with an example. Why do we prefer incremental algorithm over DDA? [8]

4. Clip a line segment between points (1, 3) to (5, 17) using Cohen Sutherland clipping algorithm so that it fit into view port with left bottom at (2, 5) and right top at (5, 12). [8]

OR

5. What are the steps involved in reflecting the object about an arbitrary axis using 2-D transformations? [8]

6. How are periodic B-spline curves different from non-periodic B-spline curves? [8]

OR

7. Given control points (10,100), (50,100), (70,120) and (100,150). Calculate coordinates of any four points lying on the corresponding Beizer curve. [8]

8. Explain how the issues involved in rotation and reflection are different in 3-D from 2-D. Give a detailed note. [8]

OR

9. Derive the transformation matrix for perspective projection. [8]

10. What are key frames? Write about morping. [8]

OR

11. Explain in brief about advantages and disadvantages of Depth buffer algorithm. [8]

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