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10MAR153

First Semester M.Tech. Degree Examination, January 2011
Advanced Computer Graphics

Time: 3 hrs. Max. Marks:100

Note: ***Answer any FIVE full questions.***

1 a. Apply the Bresenham's algorithm to turn up pixels along the line segment, determined by the points (1, 2) and (14, 8). **(10 Marks)**

b. Explain and demonstrate with suitable examples, "the even – odd method" of determining the polygon interior points. **(05 Marks)**

c. What is meat by homogeneous co-ordinate system for transformations? What are its advantages? **(05 Marks)**

2 a. State the blending functions used in B – spline curve generation. Explain the terms involved in it. **(10 Marks)**

b. Compute the intermediate points using DDA algorithm, when the end points of the line are given as (0, 0) and (7, 4). **(05 Marks)**

c. What is Cohen – Sutherland out code algorithm? Explain with an example. **(05 Marks)**

3 a. Explain the four color models with explanatory sketches. **(10 Marks)**

b. Explain the following : i) Z – buffer ; ii) Pointer's algorithm. **(10 Marks)**

4 a. Write the efficient median filtering algorithm that reduces the blurring of edges in images. **(10 Marks)**

b. Explain the grey level transformations, used in histogram equalization and indicate how the new grey levels can be calculated. **(05 Marks)**

c. Explain briefly the region based segmentation. **(05 Marks)**

5 a. "Although vision seems like such an effortless and immediate faculty for humans and other animals, it has proven exceedingly difficult to automate" Give the reasons to justify the above statement. **(10 Marks)**

b. Outline the difference between lossy and lossless compression. **(05 Marks)**

c. What are semantic nets? Draw the human face model and its semantic net. **(05 Marks)**

6 a. Discuss about the technological advances occurred in the area of VR I/o interfaces. **(10 Marks)**

b. Explain the battalion level simulators. **(05 Marks)**

c. Write short notes on behaviour modeling. **(05 Marks)**

7 a. Draw and explain the basic configuration of micro – mechanical silicon display devices. **(10 Marks)**

b. Explain the following with neat block diagrams :
i) Software configuration of VPL's RB2 system.
ii) Inside VPL body electric. **(10 Marks)**

8 a. What is virtual environment operating shell (VEOS)? Explain the fundamentals of VEOS. Also explain VEOS kernel. **(10 Marks)**

b. Illustrate a generic immersive virtual man-machine interface, with a neat block diagram. Briefly explain the basic components. **(10 Marks)**

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