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GUJARAT TECHNOLOGICAL UNIVERSITY

B E Sem-VI Examination May 2011

Subject code: 160703

Date:19/05/2011

Subject Name: Computer Graphics
Time: 10.30 am – 01.00 pm
Total Marks: 70

Instructions:

- 1. Attempt all questions.
- 2. Make suitable assumptions wherever necessary.
- 3. Figures to the right indicate full marks.

| Q-1 | (a) | (i) Explain the working of Cathode Ray tube. | 04 |
|-----|---|--|----------|
| | | (ii) For what purpose winding number method is used? What is a winding | 03 |
| | number? (b) Explain boundary fill and flood fill for polygon filling. | | 07 |
| Q.2 | (a) | Explain the term region codes. Write the steps of Cohen –Sutherland line | 07 |
| | (b) | clipping algorithm. (i) Write the differences between Random Scan display and Raster scan | 04 |
| | | display (ii) Explain perspective projection in 3D display methods. OR | 03 |
| | (b) | List the properties of Bazier curves. | 07 |
| Q.3 | (a) (b) | Explain three methods of character generation. (i) Explain shadow mask technique and explain how does it differ from beam penetration technique? | 07 04 |
| | | (ii) Explain scaling in 2D Transformations OR | 03 |
| Q.3 | (a) | Write basic principle of Bresenham's line algorithm and write | 07 |
| | (b) | Bresenham's line algorithm. (i) Define the term | 04 |
| | . , | (a) Antialiasing, (b) anchoring(ii) Which two types of sensors are used in digital cameras? | 03 |
| Q.4 | (a) (b) | Explain and write Liang Bersky line clipping algorithm. Explain the properties of B-spline curve. OR | 07 07 |
| Q.4 | (a) | Explain NLN clipping algorithm. | 07 |
| | (b) | (i) Explain reflection with respect to any plane in 3D transformations.(ii) Explain working principle of scanner. | 04 03 |
| Q.5 | (a) | Which is the simplest and commonly used image space approach to eliminate hidden surfaces? Explain. | 07 |
| | (b) | (i) Explain the term hue and saturation(ii) How coordinate values of selected screen position is determined in touch screens? | 04 03 |
| | | OR | . – |
| Q.5 | (a) | Explain ambient light and diffuse illumination. | 07 |
| | (b) | (i) List advantages and disadvantages plasma panel display(ii) Explain three types of axonometric projection in 3D. | 04 03 |