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No. 09A70504

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year I Semester Examinations, May/June - 2013

Computer Graphics

(Computer Science and Engineering)

Time: 3 Hours

Max. Marks: 75

Answer any Five Questions  
All Questions Carry Equal Marks

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- 1.a) Explain briefly about the functioning of different video display devices.
- b) Distinguish between random-scan and raster scan display devices. [7+8]
- 2.a) Explain the steps involved in mid-point circle generation algorithms.
- b) What are the data structures used in scan-line polygon filling algorithms? How is the algorithm implemented for polygon filling? [7+8]
- 3.a) Derive the transformation matrix for the reflection about an arbitrary axis when the axis is making an angle of 30 degrees clockwise with x-axis and passing through the origin.
- b) What is meant by transformation between coordinates? Give one suitable example where this is required? [7+8]
- 4.a) What is meant by window to view port transformation? Derive the transformation matrix?
- b) What is the principle of Cyrus-beck algorithm for line clipping? What are its merits? [7+8]
- 5.a) Define a quadric surface? What is its general form?
- b) State the blending functions of i) B-spline curve and ii) B-spline curves. Compare them. [7+8]
- 6.a) Distinguish between the reflections in 2-D transformations and reflections in 3-D transformation?
- b) Classify the projections and give the properties of each. [7+8]
- 7.a) What is the principle followed in area sub-division algorithms? Explain an algorithm which follows this principle?
- b) What is octree data structure? How is it helpful for the removal of hidden surfaces? [7+8]
- 8.a) List and briefly explain about various computer animation functions?
- b) Give a brief note about the motion specifications. [7+8]

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