

Code No.: 09A70504

Jawaharlal Nehru Technological University Hyderabad

B.Tech. IV Year I Semester Examinations

May/June - 2013

COMPUTER GRAPHICS

(Computer Science and Engineering)

R09

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 display devices. [7 + 8]

2. (a) Explain the steps involved in midpoint 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 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 principal 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) Bazier curve
(ii) B-Spline curves.
Compare them. [7 + 8]

6. (a) Distinguish between the reflections in 2-D transformation and reflections in 3-D transformation.
(b) Classify the projections and given the properties of each. [7 + 8]

7. (a) What is the principal followed in area sub-division algorithms? Explain an algorithm which follows this principal.
(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]