

Code No: P0501/R05

Set No. 1

**III B.Tech II Semester Supplementary Examinations, Nov/Dec 2009
COMPUTER GRAPHICS
(Computer Science & Engineering)**

Time: 3 hours

Max Marks: 80

**Answer any FIVE Questions
All Questions carry equal marks**

1. (a) List and explain the applications of Computer Graphics.
(b) With a neat cross-sectional view explain the functioning of CRT devices. [8+8]
2. (a) Explain the DDA scan conversion algorithm for generating the points on line segment, when two end-points are given as input.
(b) Digitize the line with end-points (20,10) and (30,18) using DDA algorithm. [8+8]
3. (a) List the basic transformation techniques. What are their respective mathematical and matrix representations?
(b) Prove or disprove that two successive rotations in 2-D space are commutative. [8+8]
4. (a) How the clipping-candidate (partially visible) case is handled in Cohen-Sutherland algorithm.
(b) Derive the Window-to-View port transformation. [8+8]
5. (a) Distinguish between local illumination and global illumination models.
(b) Find a formula to compute the reflection vector (R) of an input vector (L) with respect to surface normal vector N. [16]
6. (a) What is the procedure for reflecting an about an arbitrarily selected plane.
(b) What are the characteristics of perspective projections? [8+8]
7. (a) Illustrate the procedure for implementing area-sub division method.
(b) Explain how the BSP-tree method is implemented for visible surface detection. [8+8]
8. Define an animation specification involving both acceleration and deceleration and implement the in between spacing calculations. [16]
