

**II B.Tech II Semester Supplementary Examinations,  
November/December 2005  
COMPUTER GRAPHICS  
(Mechatronics)**

**Time: 3 hours**

**Max Marks: 80**

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

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1. (a) Apply the Bresenham's algorithm to turn up pixels along the line segment determined by points (5,7) and (12,11).  
(b) Give parametric equation of a line between points (1, 1, 2) and (14,14,10). [10+6]
2. Explain the scan-line algorithm for polygon filling. [16]
3. Give the homogeneous co-ordinate transformation matrices for the following transformations:  
(a) Scale x direction reduced to three-fourths the original, y- direction increased by a factor of seven-fifths.  
(b) Counter clock-wise rotation about the origin, by 30 degrees. [8+8]
4. (a) Write procedure copy-segment (old-segment, new-segment) which copies old segment to new segment.  
(b) Distinguish between window and view port. [12+4]
5. What is line segment clipping? Describe the various clipping categories into which the line segments are categorized. What is the significance of each category? [16]
6. Derive transformation matrix for rotation about an arbitrary axis [16]
7. Explain the following:  
(a) Painter's algorithm  
(b) Warnock's algorithm. [8+8]
8. (a) Write about pipeline and parallel front end architecture.  
(b) Explain about Bezier curves. [8+8]

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