AGJ 1st half (i) 85 Con. 4112-12.

## SE (COMP) IV. (RCN) 25/5/12 Computer Graphics GN-7937 (3 Hours) [Total Marks: 100

N.B.	(2 (3 (4	Question No. 1 is compulsory.  Attempt any four out of remaining questions.  Assume suitable data if necessary.  Figures to the right indicate full marks.  Illustrate answers with diagrams wherever required.	
1.	(a) (b) (c) (d)	What are the applications of Computer Graphics.  Explain frame by frame Animation.  Explain Ray Tracing.  Explain Antialiasing Techniques.	5 5 5
2.	(a)	Write Bresenham's line drawing algorithm. Also write mathematical derivations for the same.	10
2	(b)	Explain 4-connected and 8-connected methods. Also explain flood fill and boundary fill algorithms.	10
3.	(a)	What is segment? Explain segment table and any four operations which can be performed on segments.	10
	(b)	Explain Liang Barsky line clipping algorithm.	10
4.	(a)	Explain Sutherland - Hodgeman polygon clipping algorithm. How Welier - Athorton algorithm solves the problem of concave ploygon clipping?	12
	(b)	Describe HSV and RGB color model.	8
5.	(a)	Explain the rotation of an object about an arbitrary point. Derive composite matrix for the same.	10
	(b)	Describe 3D clipping of an object.	10
6.	(a)		10
	(b)	Explain the bezier curve and write the properties of bezier curve.	10
7.	(a)	Explain and compare Phong Shading and Gaurard Shading.	10