

Roll No.

BCA – 501

B. C. A. (Fifth Semester) EXAMINATION, 2011-12

Paper First

COMPUTER GRAPHICS

Time : Three Hours]

[Maximum Marks : 70

Note : Attempt any five questions. All questions carry equal marks.

1. (a) Describe the term raster scan display. 7
(b) How computer graphics is useful in education and entertainment ? Discuss with example. 7
2. (a) Explain Bresenham's line drawing algorithm with a suitable example. 7
(b) Explain the following terms : 7
 - (i) Digitizers
 - (ii) Resolution
3. (a) Discuss the purpose of clipping operations. Describe any line clipping algorithm. 7
(b) What is the purpose of segmenting a display file ? 7
4. (a) Describe the scan-line polygon fill algorithm, with an example. 7
(b) Explain how an ellipse displayed with the mid point method could be properly filled with a boundary fill algorithm. 7

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5. (a) Design an algorithm to display two dimensional cubic Bezier-curve given a set of 4 control points in the XY plane. 7
- (b) Explain rotation and scaling with the help of suitable example. 7
6. (a) Prove that the multiplication of transformation matrices for each of the following sequence of operation is commutative : 10
- (i) Two successive rotations
- (ii) Two successive translations
- (iii) Two successive scaling
- (b) Explain shear transformation. 4
7. Write short notes on the following, draw figure, if necessary :
- (i) Morphing 4
- (ii) Refresh rate 3
- (iii) DDA Algorithm 4
- (iv) Virtual Reality 3