

Total No of Questions: [VIII]

SEAT NO. :

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S.E. 2012 Course
Computer Graphics and Gaming(210249), Sem-2

Time: 2 Hours

Max. Marks : 50

Instructions to the candidates:

- 1) *Neat diagrams must be drawn wherever necessary.*
- 2) *Figures to the right side indicate full marks.*
- 3) *Use of Calculator is allowed.*
- 4) *Assume Suitable data if necessary*
- 5) *Attempt Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8*

Q1) a) Define Persistence, Random scan and Raster scan displays? Explain functioning of flat panel display. [6]

b) Write Bresenham's line algorithm and find out which pixel would be turned on for the line with end points (2, 2) to (6, 5) using the same. [6]

OR

Q2) a) Explain the TIFF image file format with block diagram. [6]

b) Explain Bresenham's circle drawing algorithm with mathematical derivation. [6]

Q3) a) Write 2D transformation matrices of translation, scaling and shearing. Give the derivation of 2D rotation matrix. [6]

b) Explain Sutherland-Hodgeman clipping algorithm with example. [6]

OR

Q4) a) How to perform rotation about an arbitrary axis in 3-D. [6]

b) Explain scan line algorithm with example. [6]

Q5) a) Explain Bezier curve with properties. [6]

b) Enlist hidden face removal algorithm and explain any two. [7]

OR

Q6) a) Explain and compare shading algorithms. [6]

b) Define Fractals? Explain Hilbert Curve and Koch curve. [7]

Q7) a) Explain BITBLT operation of raster technique. [4]

b) What is OpenGL ES? Explain in brief the libraries supported by OpenGL ES. [5]

c) Draw block diagram of i860. [4]

OR

Q8) a) Define animation. Explain the methods for controlling animations. [7]

b) Describe various operations carried out on the segment. [6]