(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 110411

Roll No.

B. Tech.

(SEM. IV) THEORY EXAMINATION, 2014-15

COMPUTER GRAPHICS

Time : 2 Hours] [Total Marks : 50

Note : Attempt all questions.

1 Answer any two parts of the following : 6×2=12

(a) Write merit and demerits of LCD (Liquid Crystal Display)

(b) If base address of a frame buffer is 100 and screen size is (15 inch × 19 inch) with resolution is 13 dpi (dot per inch) calculate the memory location where the coordinate of pixels are store.

(i) Pixel P1 at A (200, 25)

(ii) Pixel P2 at B(75, 45)

(c) Calculate value of pixels, which is scan converted by DDA algorithm and end point of line is (4,4) and (-3,0).

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2 Attempt any two of the following : **6×2=12**

(a) Write Bresenhams algorithm of line and explain.

(b) Explain the Sutherland-Cohen line clipping algorithm.

(c) Differentiate between Raster and Vector Graphics.

3 Answer any two parts of the following : **6×2=12**

(a) Explain Phong and Warn model for illumination.

(b) Let P0(0, 0), P1(1, 2), P2(2, 1), P3 (3, 1), P4 (4, 10) and P5 (5, 5) be given data control points. If interpolation based on Bezier curve is used to find a curve interpolating these data points. Find parametric midpoint of the gradient and also calculate coordinate of parametric quartiles of the curve.

(c) Explain various types of quadratic surfaces with their equation and blobby objects.

4 Answer any two parts of the following : **7×2=14**

(a) What do you understand by the term "Concatenation of transformations" ? What are its advantages ? If A and B are two different transformations, illustrate with suitable example that $A \cdot B \neq B \cdot A$.

(b) Apply the Liang-Barsky to clip the line segment from A (3,7) to B (8,10) against the regular rectangular window P (1,2), Q (9,2), R (9,8) and S (1,8)

(c) Explain midpoint circle algorithm.

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