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CSE203 Enrol. No. .....

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END SEMESTER EXAMINATION : APRIL – MAY, 2018

COMPUTER GRAPHICS

Time : 3 Hrs. *Maximum Marks : 70*

Note: ***Attempt questions from all sections as directed.***

SECTION – A (30 Marks)

Attempt any **five** *questions out of* **six.**

Each question carries **06** *marks.*

1. (a) Discuss the working methodology of Plasma Panel in brief. How is it better than LED?

   (b) Discuss about elementary image processing techniques.

2. Write mid point circle generation algorithm. Draw Circle having center (0, 0) and radius 9 using this algorithm.

3. (a) Draw a line from (0, 0) to (–6, –4) by using bresenham's algorithm. (3)

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(b) Perform rotation of triangle A(4, 1), B(5, 2) and C(4, 2) by angle 90 degree about point A. (3)

4. (a) Differentiate Gourand shading & Phong shading in brief.

(b) Write an algorithm for Z – buffer method.

5. (a) Briefly discuss about anti-aliasing technique.

(b) Write the concepts of filtering techniques in brief.

6. (a) Explain Painter's algorithm with the help of an example. (4)

(b) Briefly discuss about animations techniques. (2)

SECTION – B (20 Marks)

Attempt any **two** *questions out of* **three.**
Each question carries **10** *marks.*

7. (a) Write Cohen Sutherland algorithm for line clipping. (4)

(b) Perform clipping of line with end points M (–305, 630) and N (820, –135). Consider the window in screen coordinates which have left, right, bottom & top edges of 0,1020, 0, and 1020 respectively. (6)

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8. (a) Give the various methods of designing the animation sequences. Give different Computer Animation languages. How they are better than animation tools? Explain. (6)

(b) Perform the rotation of unit cube about yz plane by angle $\alpha = 30°$. (4)

9. Write the significance of Bazier curve in computer graphics. Given B0 (1, 1), B1 (2, 3), B2 (4, 3), B3 (3, 1) as vertices of Beziar curve. Determine the three (3) points on Bezier curve.

SECTION – C (20 Marks)

(Compulsory)

10. (a) (i) Find the projection for the unit cube with

(a) Cavalier projection

(b) Cabinet projection with $\alpha = 30°$ (3+3)

(ii) Differentiate Parallel & Perspective projection. Orthographic projection is called part of parallel projection; explain it also by drawing figures. Perform a perspective projection onto $z = 0$ plane of unit cube with center of projection is at Xc = –10 and Yc = –10. (8)

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(b) The sequencing is a standard approach for animated cartoons and can be applied to other animation applications as well. Give the general Steps of designing the animation sequence. How many key frames does a one-minute animation film sequence with no duplications require if there are five in between for each pair of key frames? (6)

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