

Paper Code & Roll No. to be filled in your Answer Book

Roll No.

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MCA (IV-Sem.)

Even Semester Examination - 2016

COMPUTER GRAPHICS & ANIMATION

[Time : 3 Hours]

[Maximum Marks :100]

Note : Attempt all questions.

Q1. Attempt any four of the following: (5x4=20)

- Write down various applications of Computer Graphics.
- Differentiate between raster scan and random scan
- Describe the Inside- Outside test for locating a pixel position in color fill algorithms.
- Define the term spline with suitable example.
- Define z- buffer algorithm.
- Differentiate between specular reflection and diffuse reflection.

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Q2. Attempt any four of the following: (5x4=20)

- (a) Explain the structure and working of CRT with help of a suitable diagram.
- (b) Explain Bresenham's algorithm for line generation with proper diagram.
- (c) What do you understand by Blobby Objects?
- (d) What do you understand by symmetry of the circle
- (e) What do you understand by Reflection. Obtain the transformation matrix for reflection about the line $y = x$?
- (f) Explain the concept of Ambient light.

Q3. Attempt any two of the following: (10x2=20)

- (a) Can we use the line clipping algorithms for polygon clipping? Explain the Sutherland-Hodgeman algorithm for polygon clipping.
- (b) Obtain the matrix for Orthographic parallel projection.
- (c) Use the Liang-Barsky line clipping algorithm to clip the line P1 (-15,-30), P2 (30, 6) against window having coordinates as (0, 0) and (15, 15).

Q4. Attempt any two of the following: (10x2=20)

- (a) Write down various methods of spline specifications. Derive the matrix for cubic Bezier curve.
- (b) Why do we need hidden surface detection methods in computer graphics? Explain back face detection algorithm.
- (c) What are the various parametric continuity conditions that define the smoothness of splines?

Q5. Attempt any two of the following: (10x2=20)

- (a) Describe computer animation and explain the basic principles of computer animation.
- (b) Describe the animation sequences that are to be followed in order to draw an animation?
- (c) Write short note on:
 - i. Cel animation
 - ii. Panning
 - iii. Morphing
 - iv. Key frame systems

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