



Printed Pages : 3

TCS501

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

PAPER ID : 1073

Roll No.

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B.Tech

**(SEM V) ODD SEMESTER THEORY EXAMINATION 2009-10
COMPUTER GRAPHICS**

Time : 3 Hours]

[Total Marks : 100

Note : *Attempt all questions.*

1 Answer any **four** questions : **5×4=20**

- (a) Write a general function for Rasterization.
- (b) Explain the role of pixel and frame buffer in graphics devices.
- (c) How much time is spent scanning across each row of pixels during screen refresh on a raster system with resolution of 1280×1024 and a refresh rate of 60 frames per second ?
- (d) Consider two raster systems with resolutions of 640×480 and 1280×1024 . How many pixels could be accessed per second in each of these systems by a display controller that refreshes the screen at a rate of 60 frames per second ?
- (e) Explain how to display file structure and control test.
- (f) Compare the computation done in Digital Differential Analyzer (DDA) algorithm with Bresenham's line drawing algorithm.



2 Answer any **four** questions : **5×4=20**

- (a) What is a segment and segment table ? Write the utility of segment.
- (b) Write a procedure for creating, deleting and renaming segments.
- (c) Explain visibility in detail.
- (d) Write a boundary fill procedure to fill an 8-connected region.
- (e) Explain scan fill algorithm with the help of suitable example.
- (f) Explain different procedures for image transformation.

3 Attempt any **two** questions : **10×2=20**

- (a) Write a procedure for rotation and translation transformation. Derive reflection metrics for reflection about the X axis.
- (b) Write and compare Cohen-Sutherland line clipping, Liang-Barsky line clipping and Nicholl-Lee-Nicholl line clipping.
- (c) What is window-to-view point coordinate transformation ? What are issues related to multiple windowing ?

4 Attempt any **two** questions : **10×2=20**

- (a) Explain parallel projection, perspective projection and depth curing projection for 3-D display methods.
- (b) Explain event handling with the help of example.

(c) What is echoing and its use ? Write different interactive techniques in computer graphics.

5 Answer any **two** questions : **10×2=20**

- (a) Make a comparison of Bezier, Hermite and B-spline algorithms for curve generation.
- (b) List the advantages and disadvantages of Back-face detection, Dept-Buffer method and A Buffer method.
- (c) Explain in detail different illumination methods and different Randerling methods.