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

Roll No. [| | | | | | | | | |]

B. Tech. III Year (V Sem.)

Odd Semester Examination-2015

COMPUTER GRAPHICS

Time : 3 Hours]   [Maximum Marks :100

Unit - I

Attempt any Four   (4X5=20)

1. Explain the role of pixel and frame buffer in graphics device.

2. What are the criteria that should by satisfied by a good line drawing algorithm? Explain.

3. Consider a raster system with a resolution of 1024*1024. What is the size of the raster (in bytes) needed to store 4 bits per pixel? How much storage is required if 8 bits per pixel are to be stored?

4. What is laser scan display and how it works?

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5. Write short note on:

i) Interleaving.

ii) Display file structure.

UNIT - II

Answer any Four   (4x5=20)

1. What is the difference between polygon relative and polygon absolute algorithm of entering polygon?

2. Write short note on :

i) Polygon representation.

ii) Polygon entering.

3. What is morphing?

4. Write a procedure for creating, deleting and renaming segments.

5. Describe the structure of segment table in detail.

UNIT -III

Answer any Two   (2x10=20)

1. (i) Reflect the polygon (-1,0), (0,-2), (1,0) and (0,2) about the line y=2 by using transformation matrics.

   (ii) Show that the composition of two rotations is additive by concatenating the matrix representations for R(?1) * R(?2) = R(?1+?2).

2. What is window- to- view point co-ordinate transformation? What are issues related to multiple windowing?

3. Give the explicit from the 3*3 matrix representing the transformation scaling by a factor of 2 in x-direction and then rotating about(2,1).

UNIT - IV

Answer any Two(2x10=20)

1. Using the origin as the centre of projection, derive the perspective projection onto the plane passing through the point R0(x0, y0, z0) and having the normal vactor N=n1i+n2j+n3k.

2. Perform a 3-D rotation about an arbitrary axis. Give matrices in homogeneous co-ordinates for each step in operation.

3. Find a matrix for parallel projection onto the plane $3x+y+4z+1=0$ when

    a) An orthographic projection is used.

    b) An oblique projection is used.

UNIT - V

Answer any Two (2x10=20)

1. Discuss the following:

    i) Basic ONPELGL operations.

    ii) Methods to draw 3D objects.

2. How will you model three dimensional objects and scenes in OENGL. Explain with an example code.

3. Define animation sequence. What are the various steps involved in animation sequence? Describe.

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