Printed Pages – 3 **CS – 603**

(Following Paper ID and Roll No. to be filled in your Answer Book)										
PAPER ID : 1037	**Roll No.**									

B.Tech.

SIXTH SEMESTER EXAMINATION, 2005-2006

COMPUTER GRAPHICS

Time : 2 Hours *Total Marks : 50*

Note : *(i) Answer **ALL** questions.*

(ii) In case of numerical problems assume data wherever not provided.

(iii) Be precise in your answer.

1. Attempt ***any four*** parts of the following : **(3x4=12)**

(a) How much memory is needed for the frame buffer to store a 640×400 display 16 gray levels ?

(b) Consider a raster display with 1024×1024 pixels, noninterlaced display mode, and a screen width of 35 cm. Estimate the average speed of the electron beam across the screen surface.

(c) Distinguish between pixel ratio and aspect ratio. What is the aspect ratio of a $12'' \times 16''$ display ?

(d) Modify the simple straight line DDA to draw either solid, dashed or dotted lines.

(e) Execute Bresenham's straight line algorithm to produce a line from (0, 0) to (17, 12) [Use hand sketch]

(f) What do you mean by "Working of Interactive Computer Graphics" ? Describe with example.

2. Attempt *any four* parts of the following : **(3x4=12)**

(a) What is Segmentation ? Give an example of a Segmentation table.

(b) Explain with examples and suitable sketches the creating, deleting and renaming segments.

(c) What is Matrix Transformation ? Show with simple example how matrices are added and subtracted.

(d) Compute the composite transformation matrix for the following transformation in the given order :

Translate by (-2, 1)

Rotate by 70 degree

Translate by (2, 3)

(e) Explain with a suitable sketch the difference between a window and view port.

(f) Instead of performing each transformation separately, we compute a composite matrix and use that. What is the advantage ?

3. Attempt *any two* parts of the following : **(6.5x2=13)**

(a) What is event handling echoing ? Explain in details with examples.

(b) Explain the working of homogeneous coordinates in a 3 - Dimensional space.

(c) Name the two most commonly used hardware input devices. Explain the working principle of a wireless mouse.

4. Attempt *any two* parts of the following : **(6.5x2=13)**

(a) The sum of a point and a vector is well defined, but is it a point or a vector ? Explain with proper sketches.

(b) What is a curve interpolation ? As far as Splines are concerned, What do Hermite, Bezier and B-Splines curves indicate ?

(c) Explain parametric representation of geometry with examples.

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