B. Tech Degree V Semester Examination, November 2008

ME 503 COMPUTER GRPAHICS

(1999 Scheme)

Time : 3 Hours Maximum Marks : 100

I. (a) Describe (i) CRT monitor (ii) LCD monitor (2 x 7.5 = 15)

(b) Explain raster graphics display. (5)

OR

II. (a) Explain the pointing and position devices with examples. (10)

(b) Describe *any one* display devices which posses inherent image storage capability. (10)

III. (a) Compare geometric and co-ordinate transformation, give suitable examples. (10)

(b) The reflection of a unit square is to be taken across a line y = 2x. Derive the expression. (10)

OR

IV. (a) Explain (i) concatenation of transformation (ii) homogenous co-ordinates with examples. (10)

(b) With reference to an arbitrary point $p(x_1, y_1)$ a unit square is to be rotated through θ, derive expression. (10)

V. (a) Give formulae for the following 3 – D transformations :

(i) scaling (ii) shearing

(iii) reflection (iv) rotation. (4 x 2.5 = 10)

(b) Explain *any one* method for generating perspective views. (10)

OR

VI. (a) Derive the transformation matrix required for isometric projection. (10)

(b) Derive the transformation matrix for rotation about any axis in space. (10)

VII. (a) Distinguish between B-splines and Bezier curves. (10)

(b) Compare parametric and non-parametric curves. (10)

OR

VIII. Give short notes on :

(i) cubic splines (ii) parabolic blending

(iii) Bezier curve (iv) B – spline (4 x 5 = 20)

IX. Write short notes on :

(i) piece wise surface representation

(ii) ruled surfaces

(iii) developable surface

(iv) quadric surface. (4 x 5 = 20)

OR

X. Give short notes on :

(i) Electrostatic plotter

(ii) Curve fitting and curve fairing

(iii) Surfaces of revolution

(iv) Stereo graphic projections. (4 x 5 = 20)

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