

TE/IT/V (R)

17/5/13

CG/VR/S:

1st Half-13-Mina - (c)-90

Con. 6971-13.

GS-8925

(3 Hours)

[Total Marks : 100

- N. B. :** (1) Question No. 1 is **compulsory**.
(2) Solve any **four** questions from remaining Question Nos. 2 to 7.
(3) Draw neat **diagrams** wherever **necessary**.

1. (a) Explain homogeneous coordinate system. 5
(b) Explain in brief Workstation based architecture. 5
(c) Describe geometric modeling in case of V. R. 5
(d) Compare bitmap and vector-based graphics. 5
 2. (a) State the matrices of 2 D object for scaling and rotation, also draw the diagrams. 10
(b) Describe the Sutherland-Hodgeman algorithm for polygon clipping. 10
 3. (a) Describe the following terms (any two) :— 10
(i) Thresholding
(ii) Dithering
(iii) Antialiasing.
(b) Define Virtual Reality. Explain the components of VR. 10
 4. (a) Describe collision detection in VR. 10
(b) Describe input and output devices for VR. 10
 5. (a) Explain B-spline curves. 10
(b) Describe scanline algorithm for polygon filling. 10
 6. (a) Describe Motion Control method. 10
(b) Write DDA line drawing algorithm. Compare DDA with Bresenham's line drawing algorithm. 10
 7. Write short notes on :— 20
(a) Parallel projection
(b) Graphics rendering pipelines
(c) VR applicatons
(d) Comparison between RGB and CMY colour model.
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