Roll No. 1902032006 Total Pages : 03

Jan-21-R-26

B. Tech. EXAMINATION, Jan. 2021

Semester V (CBCS)

COMPUTER GRAPHICS (CSE, IT)

CS-503

Time : 3 Hours *Maximum Marks : 60*

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt *Five* questions in all, selecting *one* question from each Sections A, B, C and D. Q. No. **9** is compulsory.

Section A

1. Define Computer Graphics. Discuss various Graphics softwares and standards. **10**

2. Write and explain mid-point circle generating algorithm. Derive all required equations also. **10**

Section B

3. (a) Write matrix representation of reflection and shearing transformations. 5

   (b) What is the significance of composite transformation ? 5

4. Illustrate any polygon clipping algorithm with the help of a lucid example. 10

Section C

5. (a) How curve lines and surfaces can be drawn ? 5

   (b) What do you mean by quadratic surfaces ? 5

6. Discuss depth sort visible surface determination algorithm with an appropriate example. 10

Section D

7. Discuss various color models in detail by taking some vivid examples. 10

8. (a) Explain fractals. 5

   (b) Discuss recursively defined curves in detail. 5

(Compulsory Question)

9. Short Answer Type Questions : 10×2=20

   (a) Write any *two* advantages of raster systems over random systems.

   (b) What is the role of decision parameter in line drawing algorithm ?

   (c) Why is homogeneous coordinate system required ?

   (d) What is window-to-viewport transformation ?

   (e) Differentiate between curves and surfaces.

   (f) Define centre of projection in 3D perspective projections.

   (g) Define illumination model.

   (h) What are C curves ?

   (i) How a point can be clipped ?

   (j) Write any *four* applications of computer graphics.