CBCS SCHEME

USN | | | | | | | | | | |

15CS62

Sixth Semester B.E. Degree Examination, Jan./Feb.2021
Computer Graphics and Visualization

Time: 3 hrs. Max. Marks: 80

Note: ***Answer any FIVE full questions, choosing ONE full question from each module.***

Module-1

1 a. What is computer graphics? List and explain application of computer graphics. **(05 Marks)**
b. With a neat diagram, explain the refresh CRT monitors. **(06 Marks)**
c. With a neat diagram, explain Raster Scan system. **(05 Marks)**

OR

2 a. Illustrate Display Window Management using GLUT. **(03 Marks)**
b. List and explain OpenGL point and line functions with an example. **(05 Marks)**
c. Explain Bresonhan's line algorithm with an example. **(08 Marks)**

Module-2

3 a. Write an OpenGL polygon Fill Attribute functions. **(05 Marks)**
b. How you carryout General Scan-line polygon Fill Algorithm? **(06 Marks)**
c. Construct two dimensional viewing pipeline with a neat diagram. **(05 Marks)**

OR

4 a. Explain translation, rotation and scaling of objects in 2 dimensions. **(07 Marks)**
b. Explain matrix representation of homogeneous coordinates of 2 dimensions. **(04 Marks)**
c. Describe the following : Reflection and Shearing. **(05 Marks)**

Module-3

5 a. Explain Cohen –Sutherland clipping algorithm with an example. **(08 Marks)**
b. With a neat diagram, explain various light source. **(08 Marks)**

OR

6 a. Explain the RGB color models. **(04 Marks)**
b. List and explain OpenGL geometric transformation function. **(05 Marks)**
c. Describe the basic illumination models. **(07 Marks)**

Module-4

7 a. Explain the three dimension viewing coordinate parameters. **(08 Marks)**
b. Explain the orthogonal projection. **(08 Marks)**

OR

8 a. Explain the Depth-Buffer method. **(05 Marks)**
b. Explain perspective projection transformation matrix. **(07 Marks)**
c. Explain three dimension viewing functions. **(04 Marks)**

Module-5

9 a. How Pop-up menus are created using GLUT? Illustrate with an example. **(08 Marks)**
b. Write a program in C/C++ to draw a color cube and spin it using OpenGL transformation matrix. **(08 Marks)**

OR

10 a. Explain Beziel Spline curves. **(08 Marks)**
b. Explain Quadric surface. **(08 Marks)**

* * * * *