**Question Bank**

**Module 2**

1. Explain types of polygons(concave,convex,degenerative polygon)
2. Explain six OpenGL polygon fill primitives (GL\_POLYGON,GL\_TRIANGLES……
3. Write a short note on the following:

a).vector method, rotation method for splitting polygon

b).odd-even rule

c). Nonzero winding number rule

1. Discuss Scan-Line polygon-fill algorithm.
2. Find active edge table for given polygon.
3. Explain polygon fill area attributes along with OpenGL functions.
4. Define geometric transformation. Explain the basic 2D transformation and represent them in matrix form.
5. Why is homogeneous coordinates needed?
6. Explain reflection and shear with example.
7. Describe inverse transformations.

11 Explain basic OpenGL geometric transformation functions.

12 What is composite transformation? Explain all types

13. Explain rotation and scaling about a fixed point

14. Explain 2D viewing transformation pipeline.

15. Explain Mapping the Clipping Window into a Normalized Viewport

Or Mapping the Clipping Window into a Normalized Square

16. Explain 2D successive translation and rotation are additive and successive scaling is multiplicative.

**Programs**

1. Write an OpenGL program to rotate a square on click of left mouse button and stop rotation on click of right mouse button.
2. Draw a color cube and spin it using OpenGL transformation matrices.(lab)
3. Create and rotate a triangle (or house) about the origin and a fixed point. (lab)
4. Develop a menu driven program to draw the polygon with different color.
5. Write an OpenGL program todraw a square and increase, decrese size using key i and d of keyboard

**Module 5**

1. List and discuss the three input modes with diagram.
2. Explain the programming event driven input. Each with example program. (mouse, keyboard, repshape, idle, menu callback)
3. How to create and execute display list, explain with example.
4. How menus and sub menus are created using glut? Illustrate with an example.
5. What is double buffer? Explain the advantage of double buffering.
6. Explain the following OpenGL functions:

**glutSwapBuffers() glutMouseFunc glutMotionFunc glutPassiveMotionFunc glutKeyboardFunc glutIdelFunc glutReshapeFunc**

**glutCreateMenu();**

**glutAddMenuEntry();**

**glutAttachMenu();**

**glutAddSubMenu()**

**glNewList(sq,GL\_COMPILE); glEndList();**

**glCallList(sq);**