Avinashilingam Institute for Home Science and Higher Education for Women

Deemed to be University Estd. u/s 3 of UGC Act 1956, Category A by MHRD (now MoE)
Re-accredited with A++ Grade by NAAC. CGPA 3.65/4, Category I by UGC
Coimbatore - 641 043, Tamil Nadu, India

Continuous Internal Assessment Test I – February 2026
VI Semester

Class : III UG | **Time: 2 hours**
Major : B.Sc. Computer Science | **Maximum Marks: 60**

23BCSC12 – Computer Graphics

Course Outcomes:
At the end of the course, students will:
1. Acquire knowledge for fundamental algorithms used in computer graphics.
2. Design and implement various graphical primitive techniques.
3. Develop interactive computer graphics systems.
4. Application of modern tools to develop multimedia skills.
5. Create simple applications using virtual reality.

Part - A — 6 x 1 = 6

Choose the Correct Answer

1. Which algorithm is used to determine the pixels that should be turned on to form a close approximation to a straight line between two points? CO1 K2
   a. Mid-point Circle Algorithm b. Bresenham's Line Algorithm
   c. Scan-line Algorithm d. Ellipse generating Algorithm
2. A B-Spline curve is superior to a Bezier curve because it provides CO1 K2
   a. Global control b. Higher degree of polynomials
   c. Local control of the curve shape d. Fewer control points
3. Moving an object from one position to another in a 2D plane is CO2 K2
   a. Translation b. Scaling
   c. Rotation d. Reflection
4. The process of mapping a world-coordinate scene to device coordinates is known as: CO2 K3
   a. Transformation pipeline b. Clipping pipeline
   c. Projection pipeline d. Viewing pipeline
5. In 3D Scaling, if the scaling factors S_x, S_y, S_z are all equal, the transformation is called: CO3 K2
   a. Uniform scaling b. Identity scaling
   c. Differential sclaing d. Proportional scaling
6. The transformation to produce the mirror image of a 3D object is: CO3 K2
   a. Shear b. Reflection
   c. Rotation d. Scaling

Part B — 3 x 6 = 18

Answer ALL three questions
The answer should not exceed 400 words or one page

7. a. Describe the graphics systems and devices. CO1 K2

(or)

7. b. Explain the boundary fill algorithm. CO1 K2

8. a. Describe the 2D scaling and reflection with examples. CO2 K2

(or)

8. b. Explain 2D viewing pipeline and coordinates. CO2 K2

9. a. Describe the 3D translation with examples. CO3 K2

(or)

9. b. Explain 3D shearing with its representation. CO3 K3

Part C — 3 x 12 = 36

Answer ALL three questions
The answer should not exceed 400 words or four pages

10. a. Explain the steps in Bresenham's line drawing algorithm in detail. CO1 K2

(or)

10. b. Describe scan-line polygon fill algorithm and flood fill algorithm. CO1 K2

11 .a. Describe the process in mapping window to viewport transformation. CO2 K3

(or)

11. b. Explain the Cohen-Sutherland clipping algorithm. CO2 K2

12 .a. Explain the steps for 3D rotation. CO3 K2

(or)

12 .b. Describe the 3D reflection. CO3K3