School of University Polytechnic

Diploma in Computer Science and Engineering
Semester End Examination - Jul 2024

Duration : 180 Minutes
Max Marks : 100

Sem V - N1DF501B - Computer Graphics

General Instructions
Answer to the specific question asked
Draw neat, labelled diagrams wherever necessary
Approved data hand books are allowed subject to verification by the Invigilator

1)	State the purpose of a depth buffer in computer graphics?	K1(2)
2)	Explain the working of Frame Buffer nad Video Controller in detail.	K2(4)
3)	Explain (a) Ellipsoid (b) Blobby Objects (c) Nonuniform B-Splines	K2(6)
4)	Illustrate the Cohen-Sutherland Line Clipping algorithm in detail, using a set of line segments and a rectangular clipping window, and show the process of determining which segments are fully visible, partially visible, or entirely outside the window	K3(9)
5)	Solve the uniform scaling of a 2D rectangle defined by its corners: A(1, 1), B(5, 1), C(5, 4), and D(1, 4). Perform scaling with a scale factor of 2. Find the new coordinates of points A', B', C', and D' after scaling.	K3(9)
6)	Evaluate the use of ray tracing as a rendering technique in computer graphics. Justify its advantages over rasterization methods and examine its limitations in handling real-time graphics applications.	K5(10)
7)	Compare between Sound Editing Tools and Animation Tools	K4(12)
8)	a) Evaluate the scan line algorithm for area filling in computer graphics. Verify how it works and examine its advantages and limitations. b) Examine the significance of selecting suitable line styles and types in graphic design. c)Evaluate how they contribute to enhancing the overall visual appeal of an artwork or design project.	K5(15)
9)	Evaluate the different Projections used in computer graphics and their suitability for various applications like perspective projection and orthographic projection	K5(15)
10)	a) Develop a proposal to implement General Parallel-Projection Transformations, showcasing their applications in creating parallel projections of 3D objects b) Formulate a comprehensive analysis of Spline Representation, emphasizing its capacity to create smooth curves and surfaces in computer graphics	K6(18)