SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY :: PUTTUR
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QUESTION BANK (DESCRIPTIVE)

Subject with Code : Computer Graphics (16MC821) **Course & Branch**: MCA

Year & Sem: II-MCA & II-Sem **Regulation:** R16

UNIT –I

Introduction

1.	Explain Various Applications of Computer Graphics	12M
2.	Explain the Raster Scan Systems	12M
3.	Explain the following concepts	
	(a) Random Scan	04M
	(b) Boundary Fill	04M
	(c) Flood Fill	04M
4.	Explain Pixel Addressing.	06M
5.	Explain Ellipse Generating Algorithm.	12M
6.	(a) What are DDA and Explain DDA Line Drawing Algorithm?	06M
	(b) Explain Bresenhams Line Drawing Algorithm.	06M
7.	(a) What Flat-Panel Displays?	06M
	(b) Explain Graphics Monitors and Workstations.	06M
8.	Explain	
	(a) DVST	04M
	(b) Data Glove	04M
	(c) Image Scanners	04M
	(d) Graphics Functions	04M
9.	(a) Explain Midpoint Circle Generating Algorithm.	06M
	(b) Explain Midpoint Ellipse Generating Algorithm.	06M
10.	(a) Describe Output primitives briefly.	06M
	(b) Explain Scan-Line Polygon Fill Algorithm	06M

UNIT –II

2-D Geometrical transforms and 3-D Geometric transformations

1. (a) What is Geometric Transformation? 02M
   (b) Explain Matrix Representations and Homogeneous Coordinates. 10M
2. (a) Explain Reflection and Shear? 06M
   (b) Describe General Pivot-Point Rotation? 06M
3. Explain Basic Transformations 12M
4. (a) What is Composite Transformations? 06M
   (b) Describe General Fixed-Point Scaling? 06M
5. (a) What is Affine Transformation? Explain. 06M
   (b) Describe General Composite Transformations and Computational Efficiency. 06M
6. (a) Explain the Transformations between Coordinate Systems 06M
   (b) Write 3D Coordinate-Axes Rotations. 06M
7. (a) Describe 3D Transformation Functions. 06M
   (b) Explain Modeling and Coordinate Transformation . 06M
8. (a) Explain 3D Translation and Scaling 06M
   (b) Describe Rotations with Quaternions. 06M
9. Explain Raster Methods for Transformations 12M
10. Write Concatenation Properties and General Scaling Directions? 12M

UNITI-III

2-D Viewing, 3-D Viewing and 3-D Object Representation

1.	Explain Viewing Pipeline.	06M
2.	Explain Viewing Coordinate Reference Frame .	06M
3.	(a) What is Window-to-Viewport Coordinate Transformation	05M
	(b) Explain Clipping Operations.	07M
4.	Explain Cohen-Sutherland Line Clipping detail.	12M
5.	(a) Explain Liang-Barsky Line Clipping.	06M
	(b) Explain Sutherland-Hodgeman Polygon Clipping.	06M
6.	(a) Describe Two-Dimensional Viewing Functions.	04M
	(b) Explain Projections.	08M
7.	Explain Three Dimensional Viewing Functions.	06M
8.	(a) Describe General Parallel-Projection Transformations?	06M
	(b) Describe Spline Representation.	06M
9.	Describe B-Spline Curves and Surfaces and its Properties.	12M
10.	(a) Explain Hermite Interpolation and Kochanek-Bartels Splines.	06M
	(b) Explain Bezier Curves and Surfaces.	06M
11.	Explain Cubic Spline Interpolation	
12.	Explain	12M
	(a) Ellipsoid	
	(b) Blobby Objects	
	(c) Nonuniform B-Splines	
13.	Explain	12M
	(a) Sweep Representation	
	(b) Octree	
	(c) Constructive Solid-Geometry Methods	

UNIT-IV

Visible Surface Detection Methods

1.	(a) What is Back-Face Detection?	06M
	(b) Explain the benefits of Wireframe Method?	06M
2.	(a) Explain Classification of Visible –Surface Detection Algorithms	06M
	(b) Describe Depth-Buffer Method	06M
3.	Explain A-Buffer Method.	06M
4.	Explain the following	
	(a) Scan-Line Method	04M
	(b) Curved Surfaces	04M
	(c) Surface Contour Plots	04M
5.	Explain the Visibility-Detection Functions	12M
6.	(a) What is BSP-Tree Method	06M
	(b) Describe Area-Subdivision Method.	06M
7.	(a) What is Ray-Casting and explain it?	05M
	(b) Explain Curved Surfaces.	07M
8.	Explain the importance of Depth-Buffer Method	06M
9	(a) Explain the Difference between Depth-Buffer and A-Buffer.	06M
	(b) Explain the importance of Surface Contour Plots.	06M
10.	Explain the Depth-Sorting Method in detail.	06M

UNIT-V

Computer Animation

1.	(a) What is Morphing? Explain briefly.	06M
	(b) Explain the Simulating Acceleration.	06M
2.	(a) Explain the Motion Specification.	06M
	(b) Describe Goal-Directed Systems.	06M
3.	Explain the importance of Motion Specification	12M
4.	(a) Explain the Design of Animation Sequences.	06M
	(b) Explain general Computer-Animation Functions.	06M
5.	Describe Raster Animations.	06M
6.	Explain Key-Frame Systems.	06M
7.	(a) Describe Kinematics and Dynamics.	06M
	(b) Explain the Direct Motion Specification.	06M

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