QP Code: SN22BTECH578 | Reg. No | | | | | | | | | | | AR 21

Gandhi Institute of Engineering and Technology University, Odisha, Gunupur
(GIET University)

B. Tech (Seventh Semester - Regular) Examinations, November – 2025

22BCSPC47001 –Computer Graphics
(CSE,CSE(AIML),CSE(DS))

Time: 3 hrs | Maximum: 70 Marks

Answer ALL questions

(The figures in the right hand margin indicate marks)

PART – A **(2 x 5 = 10 Marks)**

Q.1. Answer ***ALL*** questions	CO #	Blooms Level
a. If each primary colour (R, G, and B) is represented using 3 bits, how many distinct colours can be displayed per pixel?	CO1	K2
b. What is rasterization in computer graphics?	CO1	K2
c. Determine the coordinates of the reflection of point **A(5, 6)** about the line **x = 4**.	CO1	K3
d. Differentiate between *interpolation* and *approximation*.	CO3	K1
e. Explain the different *types of light sources* used in computer graphics.	CO4	K1

PART – B **(15 x 4 = 60 Marks)**

Answer ***all*** the questions	Marks	CO #	Blooms Level
2. a. Explain briefly the construction and working principle of a Cathode Ray Tube (CRT) with a neat diagram.	8	CO1	K1
b. Describe the Midpoint Line Drawing Algorithm for lines having slope greater than 1.Find the points between A(5, 5) and B(8, 10).	7	CO1	K2
(OR)			
c. Describe the working of the Seed Fill Algorithm used for Polygon Filling in computer graphics.	8	CO1	K1
d. Using Bresenham's Circle Drawing Algorithm, construct a circle of radius 10 with centre at (200, 100).	7	CO1	K3
3.a. Explain the different types of projections used in computer graphics with suitable diagrams.	8	CO2	K1
b. Perform a 90° rotation of the triangle with vertices A(2, 2), B(5, 2), and C(4, 5), keeping point A fixed.	7	CO2	K3
(OR)			
c. Write and describe the conversion from window to view port.	8	CO2	K2
d. Represent the composite matrix to find the reflection of an object with respect to an arbitrary line.	7	CO2	K3
4.a. Evaluate 5 point of Bezier curve point which control by the control point A=(1,1), B=(2, 3,), C= (5,5), D=(8,8)	8	CO3	K3
b. Describe the scan line algorithm to remove hidden surface.	7	CO3	K2
(OR)			
c. Describe properties of B-spline curve. Describe how it is different from Bezier Curve.	8	CO3	K2
d. Define Fractal. Describe different types of Fractal generation technique with	7	CO3	K2

	diagram.			
5.a.	Define aliasing and explain the different anti-aliasing techniques used to reduce it.	8	CO4	K2
b.	Describe the various types of illumination models used in computer graphics.	7	CO4	K1
	(OR)			
c.	Describe the concept of Virtual Reality (VR) and its applications.	8	CO4	K1
d.	Explain the concept and working principle of Gouraud Shading in computer graphics.	7	CO4	K2

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