

--	--	--	--	--	--	--	--	--	--	--

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



B.C.A. (Third Semester – Regular & Supplementary) Examinations, November – 2025
BCA23303 – Computer Graphics

Time: 2 hrs

Maximum: 60 Marks

(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. What is the difference between random scan and raster scan displays?	CO1	K2
b. List any two lighting models used in computer graphics.	CO2	K2
c. Explain the role of rotation in 2D transformations.	CO4	K2
d. Explain the matrix for shearing w.r.t x axis in 2D.	CO4	K2
e. Differentiate between viewport and Window.	CO3	K2

PART – B**(10 x5=50 Marks)**Answer *ALL* questions

	Marks	CO #	Blooms Level
2. a. Define Computer Graphics and its Application	5	CO1	K2
b. Explain different graphics input devices	5	CO1	K2
(OR)			
c. Explain different types of Computer Graphics	5	CO1	K2
d. Explain about Data Glove and its Application	5	CO1	K2
3.a. Explain the components of CRT with neat diagram	5	CO2	K2
b. Explain Beam Penetration technique	5	CO2	K2
(OR)			
c. Explain Shadow mask technique	5	CO2	K2
d. Explain plasma panel display with neat diagram	5	CO2	K2
4.a. Derive the Bresenham's Line Drawing for Slope $m \geq 1$	5	CO3	K3
b. Finds the points on the line between (1,1) and (7,9) using DDA algorithm	5	CO3	K3
(OR)			
c. Derive the midpoint Circle drawing algorithm	5	CO3	K3
d. Clip the lines AB with respect to rectangle (1,1) and (5,5) where A(0,0), B(4,6)	5	CO3	K3
5.a. With neat diagram explain matrix of reflection and Translation in 2D	5	CO4	K2
b. Rotate a triangle ABC 90 degree while fixing the point A. A(3,3), B(7,4), C(4,7)	5	CO4	K3
(OR)			
c. Explain the steps while rotating a triangle clockwise while fixing one of the point.	5	CO4	K2
d. Scale a unit square ABCD to its double of its area by fixing the point A (1,1).	5	CO4	K3
6.a. Explain the different types of transformations	5	CO5	K2
b. Translate a triangle ABC in a 3D in x-axis 2, y-axis 4 and z axis 3.	5	CO5	K3
(OR)			
c. Explain the need of Composite transformation in 3D	5	CO5	K2
d. Reflect the triangle ABC in a 3D w.r.t. origin where A (0,0,0) B (3,4,2) and C (7,4,5).	5	CO5	K3

--- End of Paper ---