

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)**

**CLASS: BCA
BRANCH: BCA**

**SEMESTER : V
SESSION : MO/2024**

SUBJECT: CA305 COMPUTER GRAPHICS

TIME: 3 Hours

FULL MARKS: 50

INSTRUCTIONS:

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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		CO	BL
Q.1(a)	Describe the major applications area of computer graphics.	[5] 2	2
Q.1(b)	Explain raster scan system architecture with diagram	[5] 1	1
Q.2(a)	Plot the first quadrant of the circle whose radius is 10 units using mid-point circle algorithm	[5] 2	3
Q.2(b)	Explain Boundary fill algorithm with example.	[5] 3	2
Q.3(a)	Perform mapping of a point (2,3) in window to viewport, where window is defined by its lower left corner (0,0) and upper right corner is (5,5) and viewport is defined by its lower left corner (1,1) and upper right corner is (6,6)	[5] 1	4
Q.3(b)	Discuss Sutherland Hodgman polygon clipping algorithm with example.	[5] 3	2
Q.4(a)	Define Quadratic surfaces. Explain any one of the quadratic surface.	[5] 1	1
Q.4(b)	Compute quaternion product of $P=4+3i-2j+4k$ and $Q=3-2i+2k$	[5] 3	2,4
Q.5(a)	Define projections. Differentiate between parallel and perspective projection.	[5] 3	2
Q.5(b)	Explain depth buffer algorithm.	[5] 4	2

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