

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID-SEMESTER EXAMINATION SP/2025)**

**CLASS: BTECH
BRANCH: MECHANICAL**

**SEMESTER: VI
SESSION: SP/2025**

SUBJECT: ME311 COMPUTER AIDED DESIGN

TIME: 02 Hours

FULL MARKS: 25

INSTRUCTIONS:

1. The question paper contains 5 questions each of 5 marks and total 25 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates
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			CO	BL
Q.1(a)	Describe the advantages of CAD over conventional methods.	[2]	1	1
Q.1(b)	Explain briefly the different coordinate systems used in CAD.	[3]	1	1-2
Q.2(a)	With neat sketches, explain the sweep, loft, rib, shell, and draft commands often used in CAD.	[2]	1	1-3
Q.2(b)	What is the importance of Layers in CAD?	[3]	1	1-2
Q.3	Derive an expression and explain Bresenham's line-drawing algorithm.	[5]	2	1-3
Q.4	Vectorize a line to be drawn from (10, 20) to (150, 125) mm on a display which is mapped to approximately (300 x 250 mm). The resolution of the screen is 640 x 480 pixels using DDA algorithm.	[5]	2	1-4
Q.5(a)	What are the limitations of the nonparametric representation of curves over parametric ones?	[2]	3	1-3
Q.5(b)	By means of an example, explain the explicit and implicit representation.	[3]	3	1-3

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