PRESIDENCY UNIVERSITY
BENGALURU

School of Engineering

Mid-Term Examinations - November 2024

Semester: V   **Date**: 4-11-2024

Course Code: MEC3017   **Time**: 09:30am –11 :00am

Course Name: Computer Aided Design for Additive Manufacturing   **Max Marks**: 50

Program: B. Tech.   **Weightage**: 25%

Instructions:
(i) Read all questions carefully and answer accordingly.
(ii) Do not write anything on the question paper other than roll number.

Part A

Answer ALL the Questions. Each question carries 2marks.   **2Mx5Q=10M**

1	Define Computer Graphics.	2 Marks	L1	CO1
2	What is main frame-based systems?	2 Marks	L1	CO2
3	Abbreviations CRT and PPD are used for which output devices.	2 Marks	L1	CO2
4	Write down the purpose of Scanners.	2 Marks	L1	CO1
5	What is prototyping?	2 Marks	L1	CO1

Part B

Answer ALL Questions. Each question carries 10 marks.   **4QX10M=40M**

6	6a	Write down the steps involved in designing a new product in any industry.	5 Marks	L2	CO1
	6b	Write down the advantages of computers in the design of new products.	5 Marks	L2	CO1

or

7	Write a summary of the input devices used in the computer graphics.	10 Marks	L3	CO1

8	For a planar lamina *ABCD* with *A* (3, 5), *B* (2, 2), *C* (8, 2) and *D* (4, 5) in *x-y* plane and *P* (4, 3) a point in the interior, the lamina is to be translated through 8 points in x direction and 5 points in y direction. Determine the new position *A*B*C*D** after translation.	**10 Marks**	**L3**	**CO2**

or

9	Consider a trapezium *ABCD* with *A* = (6, 1), *B* = (8, 1), *C* = (10, 4) and *D* = (3, 4). The entity is to be reflected through the *y*-axis.	**10 Marks**	**L3**	**CO2**

10	10a	Reflect a line with endpoints *P* (2, 4) and *Q* (6, 2) through the origin. Calculate new coordinates for P and Q.	**5 Marks**	**L2**	**CO2**
	10b	Write down the rotation matrix for the 3D solid for rotation about the x-axis, y-axis and z-axis.	**5 Marks**	**L2**	**CO2**

or

11	For the points, *p*1(1, 1), *p*2(3, 1), *p*3(4, 2), and *p*4 (2, 3), which define a 2-D polygon, develop a single transformation matrix that (a) reflects about the line *x* = 0, (b) translates by –1 in both *x* and *y* directions, and (c) rotates about the *z*-axis by 180°	**10 Marks**	**L3**	**CO2**

12	12a	Explain the colour combinations that the CRT uses to display coloured images.	**5 Marks**	**L2**	**CO1**
	12b	Explain different types of graphics standards. Mention the standards used in CAD software.	**5 Marks**	**L2**	**CO1**

or

13	Draw the first end appearance of the CAD GUI interface. Explain various tabs present on the GUI screen.	**10 Marks**	**L2**	**CO1**