Roll No											

PRESIDENCY UNIVERSITY
BENGALURU

SET A

SCHOOL OF ENGINEERING
END TERM EXAMINATION - JAN 2024

Semester : Semester V - 2021
Course Code : MEC3017
Course Name :CAD for Additive Manufacturing
Program : B.Tech.

Date : 05-JAN-2024
Time : 9:30AM - 12:30 PM
Max Marks : 100
Weightage : 50%

Instructions:
(i) Read all questions carefully and answer accordingly.
(ii) Question paper consists of 3 parts.
(iii) Scientific and non-programmable calculator are permitted.
(iv) Do not write any information on the question paper other than Roll Number.

PART A

ANSWER ALL THE QUESTIONS **4 X 5M = 20M**

1. What are the popular design approaches used in the CAD. Briefly explain
(CO1) [Knowledge]

2. What is surface modelling? List out the uses of surface modelling
(CO3) [Knowledge]

3. What are the advantages and disadvantages of Constructive solid geometry in solid modelling
(CO4) [Knowledge]

4. What do you mean by geometry and topology with respect to solid modelling
(CO4) [Knowledge]

PART B

ANSWER ALL THE QUESTIONS **5 X 10M = 50M**

5. In order to specify the geometry of a given solid, it is necessary to use a variety of coordinate systems. Explain the three coordinate system with suitable diagram
(CO1) [Comprehension]

6. Surface obtained without stretching or tearing is called developable surface. Explain the developable surfaces by taking an example of sheet metal for making drum and conical funnel.
(CO3) [Comprehension]

7. What are ruled (lofted) surfaces? Explain the ruled surface by joining two space curves also give parametric representation of the form.

(CO3) [Comprehension]

8. Explain the concept of developable surfaces and 16 point form bi cubic surface patch with simple sketch

(CO4) [Comprehension]

9. Construct solid geometry (CSG) approach with Boolean operation. List out the limitations of CSG

(CO4) [Comprehension]

PART C

ANSWER ALL THE QUESTIONS **2 X 15M = 30M**

10. Given a line segment with starting point as (0,0) and end point as (4,4). Apply 30 degree rotation anticlockwise direction on the line segment and find out the new coordinates of the line.Show the graphical representation of the rotation

(CO2) [Application]

11. Given a line segment with starting point as (0,0) and the end points as (5,5). Apply 30-degree rotation counter clockwise on a line segment and find out new coordinates of line. Show matrix method calculation and graphical representation

(CO2) [Application]