

May 2025

B.Tech. (Mechanical) (Sixth Semester)

CAD/CAM (PCC-ME-601/21)

Time : 3 Hours]

[Maximum Marks : 75

**Note :** It is compulsory to answer all the questions (1.5 marks each) of Part A in short. Answer any *four* questions from Part B in detail. Different sub-parts of a question are to be attempted adjacent to each other.

**Part A**

1. (a) What is Internet of Things ? 1.5
- (b) Name any *two* CAM softwares. 1.5
- (c) How is Failure analysis done using ANSYS ? 1.5
- (d) What is Machine Learning ? 1.5
- (e) What is Augmented Reality ? 1.5
- (f) What is DNC ? 1.5
- (g) What is CSG modeling ? 1.5
- (h) What is the main difference between CAD and manual designing ? 1.5

- (i) What is Simulation ? 1.5
- (j) What is Cloud Manufacturing ? 1.5

### Part B

- 2. (a) Write the benefits of CAD over Manual Designing for generating best designs. 10
- (b) Write down various transformations and their matrices. 5
- 3. (a) What are the disadvantages of Bezier curves over B-Spline ? 5
- (b) Explain parts and working of a CNC machine with live examples. 10
- 4. Explain the components of Industry 4.0 with examples and neat sketches. 15
- 5. (a) What is a Retrieval type CAPP ? Explain with examples. 5
- (b) Explain the various types of surfaces used in CAD modeling with their properties and applications. 10

- 6. (a) Mention the procedure of Reverse Engineering. 5
- (b) What are the main parts of a FMS ? Specify various Sensors used in Robotics. 10
- 7. What is the need of an AI ? Specify its benefits and applications with examples. 15

