

Roll No.

3207

**B. Tech. (ME) 5th Semester
Examination – February, 2022**

COMPUTER AIDED DESIGN & MANUFACTURING

Paper : PCC-ME-301-G

Time : Three hours]

[Maximum Marks : 75

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt any *five* questions, selecting *one* question from each Unit. Question No. 1 is *compulsory*. All questions carry equal marks.

1. Explain the following : 2.5 × 6 = 15
- (a) Explain CAE.
 - (b) Explain Additive Manufacturing.
 - (c) What is transformation Matrix.
 - (d) Explain CAPP.
 - (e) Discuss the basic properties for curve designing ?
 - (f) Explain Bezier curves. What are its properties.

UNIT - I

2. Explain the Generic AM Process. 15
3. Discuss the hardware and software requirement of CAD. 15

UNIT - II

4. Explain the colour system used in raster scan display device. Explain various colour model. What is gray scale? 15
5. Four vertices of Bezier polygon are $P_0(1, 1)$, $P_1(2, 3)$, $P_2(4, 3)$ and $P_4(3, 1)$. Determine the equation of Bezier curve in the parametric form. 15

UNIT - III

6. Explain, What is FEM? Explain the different steps of finite element modeling. Also write down the elemental stiffness matrix for linear solution. 15
7. Explain any *two* of them. $7.5 \times 2 = 15$
 - (a) Extrusion Based systems
 - (b) Software issues for AM
 - (c) Direct Digital Manufacturing

UNIT - IV

8. Discuss benefits of FMS. Name building blocks of FMS and hardware and software components of FMS. 15
 9. What is CAPP? What is its type? Explain any one of them. 15
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