28/05/2019

Roll No. ..... Total Pages : 03

BT-6/M-19 **36043**

COMPUTER AIDED DESIGN AND MANUFACTURING

ME-308-E

Time : Three Hours] [Maximum Marks : 100

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit.

Unit I

1. (a) Discuss the benefits of CAD/CAM to Engineering Design as compared to conventional methods. **10**

(b) What does parametric equation mean ? List the advantages as compared to explicit and implicit equation. **10**

2. (a) What do you mean by Group technology ? What are the advantages of GT ? **10**

(b) What do you mean by Part families ? Discuss the OPITZ clarification system of part clarification and coding system. **10**

Unit II

3. A rectangle with coordinate A(2, 3), B(2, 5), C(6, 5) and D(6, 3) is reflected along line whose equation is $y = 2x + 4$ and sheared by 2 units in x-direction and 2 units in y-direction. Find the new coordinates of the object. **20**

4. Find the equation of a Bezier curve which is defined by four points as $P_0(2, 2, 0)$, $P_1(2, 3, 0)$, $P_2(3, 3, 0)$ and $P_3(3, 2, 0)$ and also find the points on the curve for $u = 0, ¼, ½, ¾, 1$. **20**

Unit III

5. (a) Differentiate between plain and surface rule. **10**
   (b) What do you mean by blending function ? Explain in detail. **10**

6. Explain the following : **20**
   (i) Sweep representation
   (ii) B-representation.

Unit IV

7. (a) Describe different steps involved in variant process planning. **10**
   (b) What are different types of NC systems. **10**

8. Explain the following :

(i) Product Flow Analysis

(ii) FMS

(iii) Computer Aided Process Planning. 20