

Roll No.

24047

**B. Tech 3rd Semester (MAE)
Examination – December, 2017**

COMPUTER AIDED DESIGN

Paper : ME-203-F

Time : Three Hours]

[Maximum Marks : 100

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 *five* questions in all, selecting *one* question from each Section. Question No. 1 is *compulsory*.

1. (a) Name the component of design process.
- (b) Define FMS.
- (c) What is ruled surface
- (d) What is ATC and its application.
- (e) What do you mean by local co-ordinate system ?
- (f) Define CAD.
- (g) What do you mean by local co-ordinate system ?

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(h) What are blending functions ?

(i) Define G02, G90 CNC codes.

(j) What is sweep-representation ? $2 \times 10 = 20$

SECTION – A

2. What do you understand by computer-aided design ? Discuss reasons for implement CAD in industry. 20

3. A Pyramid defined by the coordinate $A(0,0,0)$, $B(2, 0, 0)$, $C(0, 1, 0)$ and $D(0,0, 1)$ is rotated by 45° about the line L that has direction $V=j+k$ and passes through point $C(0,1,0)$. Find coordinates of the rotated figure. 20

SECTION – B

4. (a) Draw Bezier curve with the help of control points $(1, 1)$, $(10, 5)$, $(10, -5)$ and $(15, 10)$. 10

(b) What are the basic characteristics of curves, explain ? 10

5. (a) Differentiate between constructive solid geometry (CSG) and boundary representation. (B-rep). 10

(b) Explain the concept of B-Spline surface. 10

SECTION – C

6. Explain the Construction and working of CNC machines. 20

7. What is group technology ? Explain part classification and write various coding system. Why group technology is developed ? Write its advantages. 20

SECTION – D

8. Explain in detail the FMS, types of FMS its applications, advantages and disadvantages. 20

9. Explain the concept of finite element method (FEM) and finite element analysis. 20