

24047

B. Tech. 3rd Semester (ME) F-Scheme  
Examination, December – 2016  
COMPUTER AIDED DESIGN  
Paper–ME-203-F

Time allowed : 3 hours ] [Maximum marks : 100

Note : Attempt any five questions from eight questions.

At least one question from each section. Question

No. 1 is compulsory.

1. (a) Name the components of design process.

2 × 10 = 20

- (b) Define FMS
- (c) What is CAPP ?
- (d) What is ATC and its application ?
- (e) Name the different curve primitives.
- (f) Define CAD.
- (g) What do you mean by versatility ?
- (h) What are explicit and implicit functions ? Give examples.
- (i) Define Parameter representation of Circle.
- (j) What is sweep-representation ?

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( 2 )

24047

**Section-A**

2. What do you understand by computer-aided design ? Discuss reasons for implementing 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) Differentiate between constructive solid geometry (CSG) and boundary representation. (B-rep). 10  
(b) Define B-Spline surface. 10
5. (a) What are the ruled surface and how to sketch it? 10  
(b) Explain the concept of surfaces of revolution in detail. 10

**Section-C**

6. What are the NC systems, describe its types in detail. 20
7. (a) What is group technology ? Explain the coding techniques. 12  
(b) What are the advantages of Group technology. 8

24047

( 3 )

24047

**Section-D**

8. What is conventional process planning ? Discuss its various types of CAPP and also explain the steps in variant process planning. 20
9. Explain the concept of finite element method (FEM) and finite element analysis. 20

24047