24047

B. Tech. 3rd Semester (MAE)
Examination – December, 2018

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 any *five* questions from *eight* questions. At least *one* question from each Section. Question No. **1** is *compulsory*.

1. (a) What is CNC machines ?   2 × 10 = 20

   (b) Write name of three important characteristics of curves.

   (c) Define manufacturing cell.

   (d) What is ATC and its application ?

   (e) Name the different curve primitives.

   (f) Define shape function.

   (g) What do you mean by versatility ?

(h) What are explicit and implicit functions ? Give examples.

(i) Name the different of elements of CNC machine.

(j) What is sweep-representation ?

SECTION – A

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

3. A square having end points A (1,1), B (5,1), C (5,5), D (1,5) is rotated 45° in clockwise direction keeping the point B fixed. Find its final co-ordinate.   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 surfaces and how to sketch it ?   10

(b) Explain the concept of surfaces of revolution in detail.   10

SECTION – C

6. Explain construction and working of CNC machines. 20

7. (a) What is group technology ? Explain the coding techniques.   12

(b) What are the advantages of Group technology ? 08

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

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