013615

August/September 2022
B.Tech. (ME) Re-Appear 6th Semester
Computer Aided Design (ME-304C)

Time : 3 Hours]   [Max. Marks : 75

Instructions:

1. *It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.*
2. *Answer any four questions from Part-B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*

PART-A

1. (a) What is limitation of Bezier curves?   (1.5)

    (b) What is the main use of ProE software in industries?
                                                        (1.5)

    (c) How testing of designs is done in FEA environment?
                                                        (1.5)

    (d) What is adaptive control?   (1.5)

    (e) What are concatenated transformations?   (1.5)

    (f) Name any two CAE softwares.   (1.5)

(g) What is 2d drafting? (1.5)

(h) What is dynamic analysis? (1.5)

(i) What is group technology? (1.5)

(j) What is the use of a CNC machine? (1.5)

PART-B

2. (a) Explain the procedure of FEA in Computer Aided Design. (10)

(b) Give the parametric representation of Bezier spline curves. (5)

3. (a) Derive the transformation matrices for rotation and reflection about x, y & z axes. (5)

(b) Explain the concept of Solid and Surface modelling and their uses. (10)

4. Develop a part program for Step turning of a bar assuming the suitable dimensions. (15)

5. (a) Specify the process of CSG and B-Rep solid modelling techniques with applications. (5)

(b) Explain need of CAD simulation and testing with live examples. (10)

6. (a) How optimal meshing is done in FEA. Give example with diagram. (5)

(b) What is Surface Modelling? Explain its techniques with diagrams. (10)

7. Compare the Advantages, Procedure and Limitations of CAD with Manual designing with examples. (15)

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