

Roll No.

Total Pages : 3

013605

August/September 2022
B.Tech. (ME) VI SEMESTER
CAD/CAM (PCC-ME-302)

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 routing flexibility? (1.5)

(b) Name any *three* CAD softwares. (1.5)

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

(d) What is Adaptive control? (1.5)

(e) What are homogeneous transformations? (1.5)

(f) What is simulation/Motion analysis? (1.5)

(g) What is CSG modelling? (1.5)

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- (h) What is the main difference between static and dynamic analysis? (1.5)
- (i) What is need of CAPP? (1.5)
- (j) What is the use of ANSYS software in industries? (1.5)

PART-B

- 2. (a) Explain the utility/applications of Computer Aided Design Models in Industries. Compare the benefits of CAD over manual designing. (10)
- (b) What is a concatenated transformation? Specify various transformation matrices with examples. (5)
- 3. (a) Derive the transformation matrices for rotation and reflection about x, y & z axes. (5)
- (b) Explain various types of surfaces used in CAD modelling with their properties and applications. (10)
- 4. Describe the techniques of Solid Modelling with illustration assuming the suitable dimensions. (15)
- 5. (a) Explain the differences between Generative and Retrieval type CAPP systems with applications. (5)
- (b) Compare NC with CNC machines with live examples. (10)

- 6. (a) Specify the Preprocessing steps in FEA. Give an example with diagram. (5)
 - (b) What are the main parts of a robot? Explain Sensors installed on robots with applications of Robots in practical world. (10)
 - 7. Write down the Advantages, Parts and Limitations of FMS with examples. (15)
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