020501

December 2024
B. Tech. (CAD/CAM) (Fifth Semester)
RAI (PCC-RAI-501/21)

Time : 3 *Hours*]   [*Maximum Marks* : 75

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

Part A

1. (a) What is the need of Computer Aided Designing ?   1.5

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

   (c) How failure analysis of designs is carried out in CAE ?   1.5

   (d) What is an optimized design ?   1.5

(e) What is Artificial Intelligence ? **1.5**

(f) Name any *two* CAM softwares. **1.5**

(g) What is use of surfaces in practical world ? **1.5**

(h) What are the main applications of robots in industries ? **1.5**

(i) What is DNC machine ? **1.5**

(j) What is the Reverse Engineering ? **1.5**

Part B

2. (a) Discuss the steps in FEA for Design optimization. **10**

(b) Give the properties and mathematical representation of Bezier spline curves. **5**

3. (a) Differentiate between Wireframe modelling and Solid Modelling in detail. **5**

(b) Write all types of the transformation matrices with examples. **10**

4. Explain the main techniques of Solid and Surface modelling with live examples. **15**

5. (a) What is Machine Learning ? How can it be useful ? **5**

(b) Explain benefit of CAM simulation using MasterCAM with live examples. **10**

6. (a) Explain Retrieval type CAPP with steps block diagram. **5**

(b) What is FMS ? Explain its parts and their working with diagrams. **10**

7. Explain the features and parts of Industry 4.0 and Cloud Manufacturing with examples. **15**