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SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR  
(AUTONOMOUS)

B.Tech III Year I Semester Supplementary Examinations August-2021

CAD/CAM

(Mechanical Engineering)

Time: 3 hours

Max. Marks: 60

**PART-A**

(Answer all the Questions 5 x 2 = 10 Marks)

- |   |                                                                |    |
|---|----------------------------------------------------------------|----|
| 1 | a Define homogeneous transformations.                          | 2M |
|   | b List out various construction methods in geometric modeling. | 2M |
|   | c Justify the need for CNC Machines                            | 2M |
|   | d Write down the purpose of Group Technology.                  | 2M |
|   | e What are the benefits of CAPP?                               | 2M |

**PART-B**

(Answer all Five Units 5 x 10 = 50 Marks)

**UNIT-I**

- |   |                                                                                |    |
|---|--------------------------------------------------------------------------------|----|
| 2 | a Define CAD. Explain the reasons adopting CAD in an engineering organization. | 5M |
|   | b Explain briefly about 3D transformations                                     | 5M |

**OR**

- |   |                                                        |    |
|---|--------------------------------------------------------|----|
| 3 | a Explain the main elements of CIM system.             | 6M |
|   | b Write short notes on homogenous co-ordinate systems. | 4M |

**UNIT-II**

- |   |                                                                                                  |    |
|---|--------------------------------------------------------------------------------------------------|----|
| 4 | a Differentiate Wire frame modeling and solid frame modelling.                                   | 4M |
|   | b Describe the method of defining Bezier curve. Give some of its advantages in CAD applications. | 6M |

**OR**

- |   |                                                                        |    |
|---|------------------------------------------------------------------------|----|
| 5 | a Compare Bezier curve with B-splines for CAD application              | 4M |
|   | b Write about boundary representations and constructive solid geometry | 6M |

**UNIT-III**

- |   |                                                                    |    |
|---|--------------------------------------------------------------------|----|
| 6 | a Explain in detail basic components of CNC system                 | 6M |
|   | b Differentiate CNC Machines Tools with Conventional Machine Tools | 4M |

**OR**

- |   |                                                                |    |
|---|----------------------------------------------------------------|----|
| 7 | a Briefly explain about Cutter radius compensation             | 4M |
|   | b Explain G00, G01, G02 and G03 codes with appropriate example | 6M |

**UNIT-IV**

- |   |                                                                           |    |
|---|---------------------------------------------------------------------------|----|
| 8 | a With neat sketch, explain different coding systems in Group Technology. | 6M |
|   | b Write short notes on Computer Aided Quality Control (CAQC)              | 4M |

**OR**

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|---|--------------------------------------------------|----|
| 9 | a Discuss the main components of FMS             | 5M |
|   | b Explain about integration of CAQC with CAD/CAM | 5M |

**UNIT-V**

- |    |                                             |    |
|----|---------------------------------------------|----|
| 10 | a Write short notes on Generative type CAPP | 4M |
|    | b Explain MRP-II with neat sketch           | 6M |

**OR**

- |    |                                            |    |
|----|--------------------------------------------|----|
| 11 | a Briefly discuss about shop floor control | 6M |
|    | b Write down the benefits of CIMS          | 4M |

\*\*\*END\*\*\*