**R13**

# JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
## B. Tech IV Year I Semester Examinations, November/December - 2016
## CAD/CAM
### (Common to ME, AE, AME, MSNT)

Time: 3 Hours                                                    Max. Marks: 75

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer all questions in Part A.
Part B consists of 5 Units. Answer any one full question from each unit. Each
question carries 10 marks and may have a, b, c as sub questions.

## PART- A
(25 Marks)

1.a) Write any five advantages and disadvantages by the adoption of CAD. [2]
  b) Write any 10 AutoCAD commands with small description. [3]
  c) Differentiate between Algebraic and Geometric form of a curve. [2]
  d) Write Bezier surface and B-Spline surface mathematical relations. [3]
  e) What are M03, M30 codes stands for in NC Programming? [2]
  f) Explain the use of MACROs in part programming? [3]
  g) List the methods available for taking decisions in a process plan. [2]
  h) What do you understand by the terms PDIR, MRIR and PPIR? [3]
  i) Enumerate the benefits of FMS. [2]
  j) Define off-line and on-line inspections. [3]

## PART-B
(50 Marks)

2.a) Briefly explain the conventional process of the product cycle in conventional
     manufacturing environment.
  b) Draw the block diagram of the data exchange method between two different CAD
     systems using neutral data format. [5+5]

**OR**

3.a) How do you distinguish between a CPU and a Microprocessor.
  b) What are the Input devices and Output devices, explain them briefly. [5+5]

4.a) Give a classification of the different surfaces that can be used in Geometric modelling
     applications.
  b) What is meant by sweep? Discuss in detail the various types of sweep techniques
     available for 3D geometric construction. [5+5]

**OR**

5.a) What is meant by continuity of curves? What are the types of continuity curves?
  b) Find the equation of a Bezier curve which is defined by four control points as (80,30,0),
     (100,100,0),(200,100,0) and (250,30,0). [5+5]

6.a) Explain the principle of CNC system with a block diagram.
b) Write NC part program for the part shown in the below figure. [5+5]



**OR**
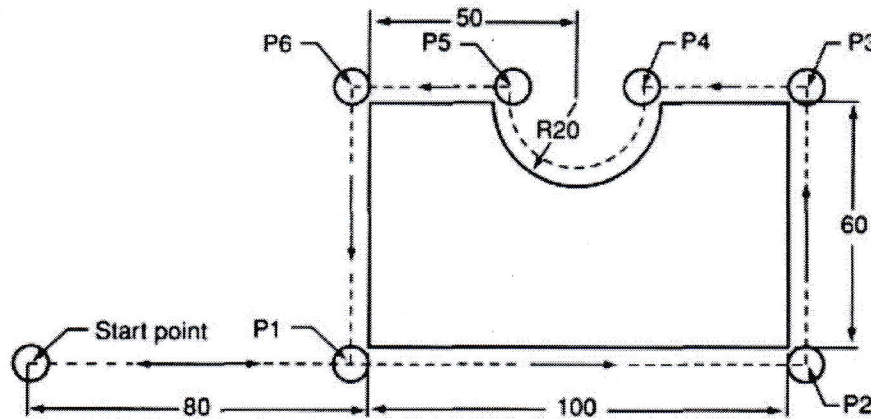
7.a) Explain linier and circular interpolations in CNC systems.
b) What is manual CNC part programming? Explain with an example. [5+5]

8.a) What is part family? State advantages and limitations of Group Technology.
b) Briefly explain the need of CAPP (Computer Aided Process Planning). [5+5]

**OR**

9.a) Explain about the OPITZ coding system generally used in Group Technology.
b) What are the main objectives of MRP (Manufacturing Resource Planning)? Explain them briefly. [5+5]

10.a) Discuss the various topologies used in CIM with their relative advantages and disadvantages.
b) How does Lean production differ from Flexible production system? Explain. [5+5]

**OR**

11.a) Describe the Scheduling and Dispatching issues related to FMS (Flexible Manufacturing System).
b) Define computer aided quality control. Explain how it is implemented. [5+5]

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