

Code No: 117BD

**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. [5]
- b) Draw the block diagram of the data exchange method between two different CAD systems using neutral data format. [5]

**OR**

- 3.a) How do you distinguish between a CPU and a Microprocessor. [5]
- b) What are the Input devices and Output devices, explain them briefly. [5]
- 4.a) Give a classification of the different surfaces that can be used in Geometric modelling applications. [5]
- b) What is meant by sweep? Discuss in detail the various types of sweep techniques available for 3D geometric construction. [5]

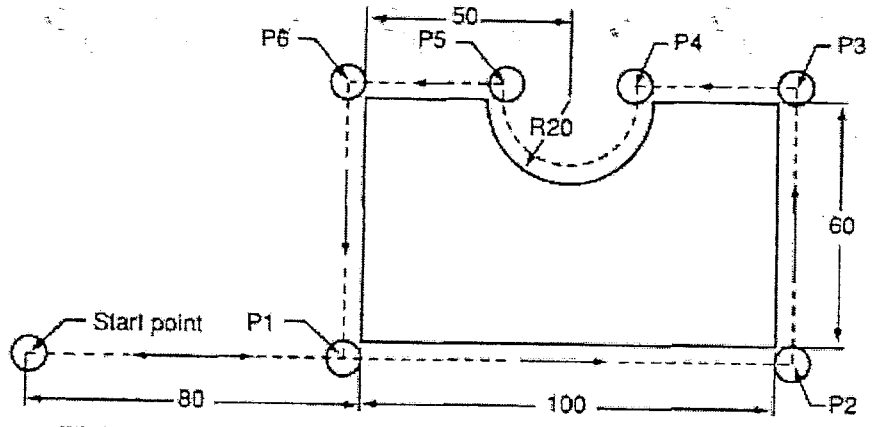
**OR**

- 5.a) What is meant by continuity of curves? What are the types of continuity curves? [5]
- 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]

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- 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]



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OR

- 7.a) Explain linear 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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