

Code No: D3303, D0403, D5203

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

M.Tech II - Semester Examinations, March/April 2011

COMPUTER AIDED MANUFACTURING

(COMMON TO ADVANCED MANUFACTURING SYSTEMS, CAD/CAM,
DESIGN FOR MANUFACTURING)

Time: 3hours

Max. Marks: 60

Answer any five questions
All questions carry equal marks

- - -

1(a) Briefly explain any 3 types of geometry commands used in APT.

(b) Write the APT program for the geometry shown in Figure 1 below:

[6+6]

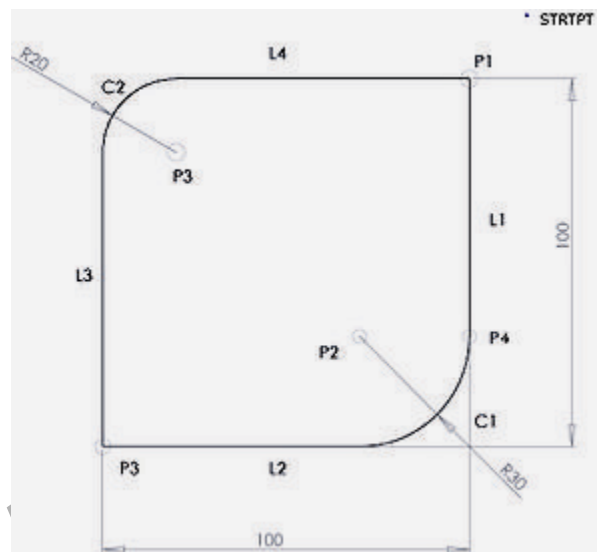


Figure 1

2 (a) Discuss about interchangeable and quick change tooling systems used in CNC machines.

(b) Describe adaptive control with optimization for a milling machine with a neat sketch.

[6+6]

3 (a) With the aid of a neat diagram, explain the structure of a post processor in a NC system.

(b) What is DAPP? Discuss about the major variables in the DAPP based post processor.

[6+6]

4.(a) What is a microcontroller? Explain the various the factors to be considered in the selection of a microcontroller used in a CNC machine.

(b) Define PLC. Describe the various hardware components of a PLC.

[6+6]

Contd....2

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- 5(a) Describe the functioning of a Hybrid CAPP system.
(b) With a block diagram explain the functioning of a CMM. Also mention the advantages and limitations of it. [6+6]
6. (a) What is adaptive control? Explain the various sensors used for controlling the possible parameters during machining on CNC machine tools.
(b) Discuss the various hardware components of a Microcontroller. [6+6]
7. (a) Describe about automatic tool path generation.
(b) Compare CNC with DNC and mention the advantages and disadvantages of DNC, [6+6]
8. Write short notes on the following:
(a) Any three types of motion commands used in APT.
(b) Automatic head changers used in DNC.
(c) Application of PLC's in CNC machines.
(d) Expert systems. [6+6]

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