JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M.TECH II - SEMESTER EXAMINATIONS, APRIL/MAY 2012
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

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1.a)   Briefly explain any 3 types of motion commands used in APT.
  b)   Write the APT program for the geometry shown in Figure 1 below:
       The coordinate of the points are P0 (-1,-1), P1 (0,0), P2(3,0), P3(4,0), P4(6.5, 5.5)
       Radius at C1 is 1 mm, C2 is 0.5 mm. Location of C3 (3.5,6). Assume any missing
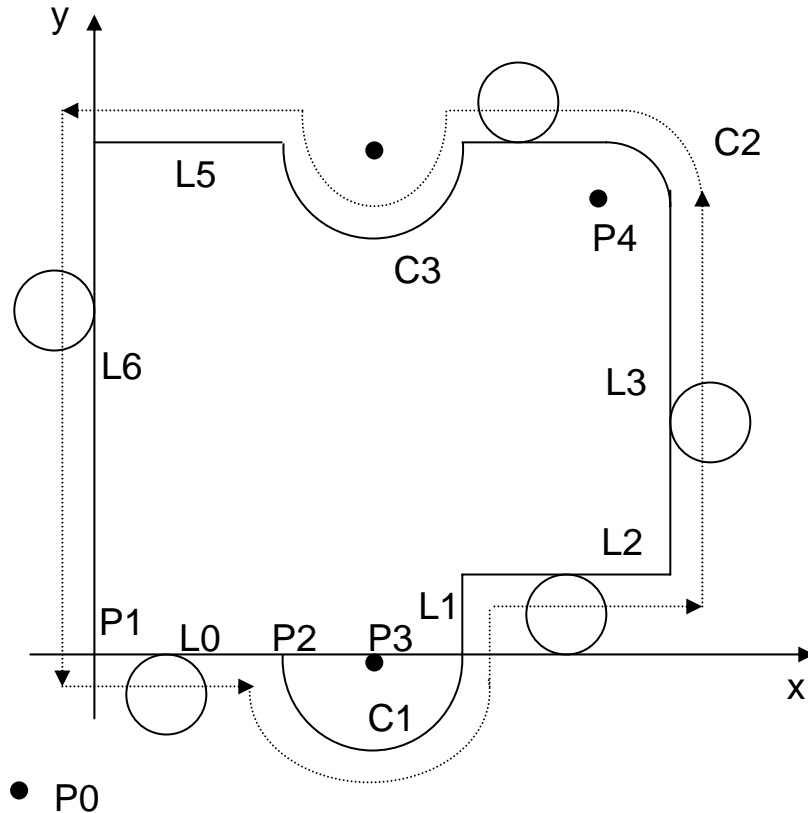   data.

Figure 1

2.a)   What is a DNC? Explain different types of DNC system and mention their
       advantages and disadvantages.
  b)   Describe adaptive control with constraint for turning with a neat sketch.

3.a)   Explain the role of a post processor in NC machining systems.
  b)   Discuss the functioning of a DAPP based post processor and mention about the
       major variables that effect DAPP.

4.a) What is a microcontroller? Explain about the various hardware components of a microcontroller used in a CNC machine.
   b) Define PLC. Describe the applications of PLC in CNC machines.

5.a) Describe various types of computer aided inspection methods and quality control techniques.
   b) What is CMM? Classify different types of CMM's.

6.a) What is CAPP? Explain about hybrid CAPP system.
   b) Discuss the various hardware components of a PLC.

7.a) Describe about various types of optical inspection methods.
   b) Explain about interchangeable tooling systems used in CNC machines.

8.   Write short notes on the following:
        (a) Any three types of geometry commands used in APT.
        (b) Coolant systems used in CNC
        (c) Automatic Tool path generation.
        (d) Artificial Intelligence Systems.

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