R09

Code No: D3303, D0403, D5203

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M.Tech II- Semester Regular Examinations September, 2010
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) Differentiate between manual part programming and APT-programming.
   b) Write the APT program for the profile milling of the component shown in Fig.1. [12]

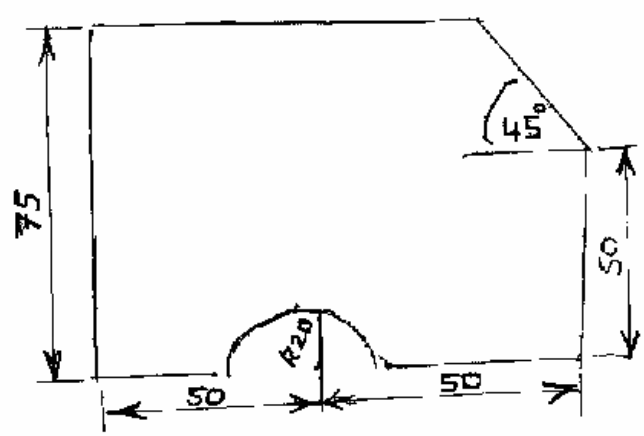

Figure 1

2. a) Explain the terms " interpolation" preparatory function and post-processor as applied to APT.
   b) Differentiate between preset and qualified tools used on CNC machines mentioning their advantages. [12]

3. a) Differentiate between Behind the Tape Reader (BTB) system and special control unit system used in DNC machining.
   b) What are the advantages and limitations of DNC over conventional numerical control systems? [12]

4. a) What are the various process changes occur over time during machining and how can they be controlled in AC?
   b) What are the two types of adaptive controls used in practice and explain with schematic diagram working of any one of them. [12]

5. a) How low-level and high-level computer type languages in programming of PLCs?
   b) How PLC operates and describes its capabilities in arithmetic functions, matrix functions & analog control? [12]

6. a) Describe hardware components, external memory, counters and timers used in micro-controllers mentioning their working.

b) Differentiate between variant type and generative type of computer aided process planning and explain the modular structure of generative CAPP system. [12]

7. a) Discuss the benefits of computer aided quality control and explain the method of part inspection using CMM.

b) What are the various optical inspection methods used in in-process gauging system. [12]

8. a) Answer the following
a) Expert systems.
b) DAPP based post processor.
c) Interchangeable tooling system. [12]

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