

ME (8)

8E8071	Roll No. _____	[Total No. of Pages : 3]
	8E8071	
	B.Tech. VIII Semester (Main/Back) Examination, April/May - 2017 Mechanical Engg. 8ME1A Computer Integrated Manufacturing Systems	

Time : 3 Hours

Maximum Marks : 80
Min. Passing Marks : 26

Instructions to Candidates:

Attempt any five questions, selecting one question from each unit. All Questions carry equal marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitable be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.

Unit-I

1. a) Explain various types of manufacturing systems. (6)
- b) Explain Product cycle. Briefly outline various achievements in CAD/CAM. (4+6)

OR

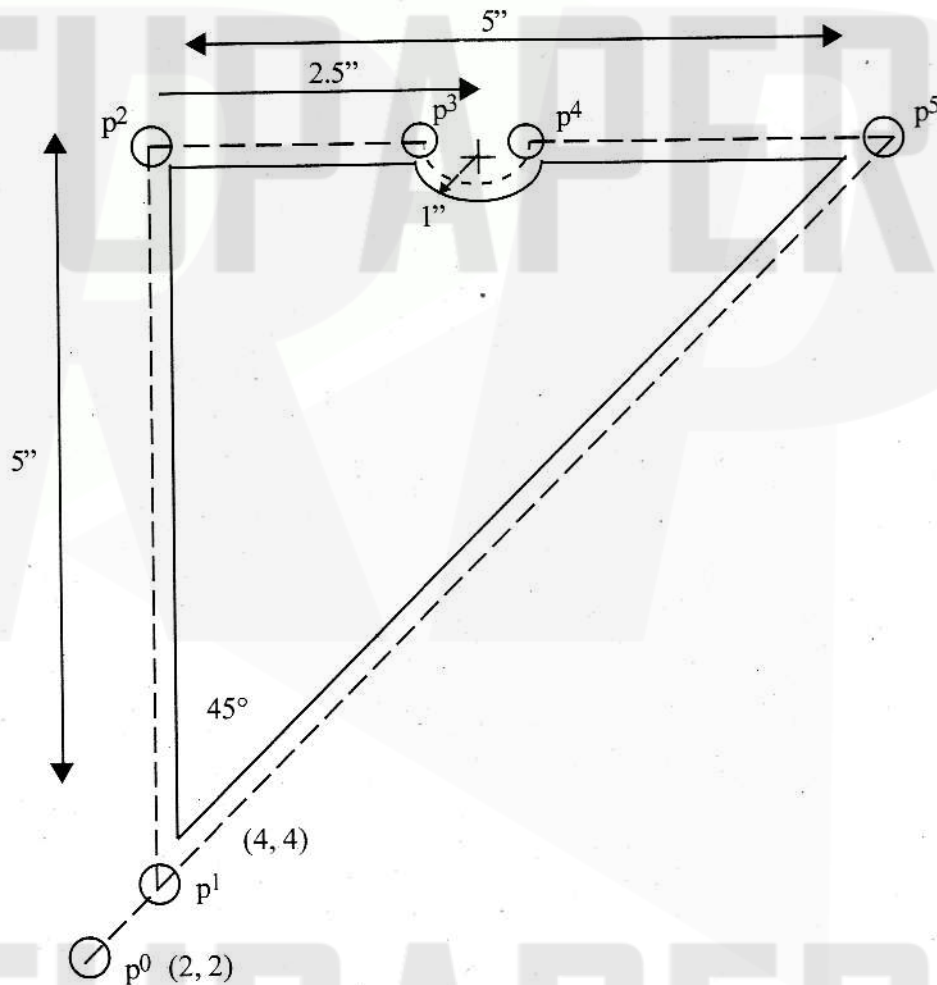
1. a) Briefly explain various basic components of NC system. Explain the NC procedure for milling a part. (5+5)
- b) Briefly explain economics of NC manufacturing over conventional manufacturing. (6)

Unit-II

2. a) Differentiate CNC, direct NC and combined CNC/DNC system. (5)
- b) Explain the various functions of CNC. (6)
- c) Write various R&D opportunities in the conventional NC system for developing the advance NC system. (5)

OR

2. a) Write the part programme for milling the side surfaces of the part given below. Given data : Tool size = 0.25 inch, Feed rate = 6 inch per minute, Cutting speed = 300 rpm, Tool start position : 2.0, 2.0, Programming in inches. Motion of tool is along the path $p_0 \rightarrow p_1 \rightarrow p_2 \rightarrow p_3 \rightarrow p_4 \rightarrow p_5 \rightarrow p_1 \rightarrow p_0$. (8)



- b) Explain various types of adaptive control systems. What are the various benefits of adaptive control systems? (4+4)

Unit-III

3. a) Explain information flow system in retrieval type CAPP system. Enumerate various benefits of CAPP. (4+4)
- b) Write short note on computerized machinability data system and time standards. (8)

OR

3. a) Explain various parts classification systems. Explain various parts coding structures. (4+4)

- b) Explain OPITZ parts classification and coding system. (8)

Unit-IV

4. a) Explain the various functions of inventory management module of computer integrated production management system. Explain various configurations for process computer monitoring. (4+6)
- b) Differentiate between Direct Digital and Supervisory computer process control system. (6)

OR

4. a) Explain photogrammetry and machine vision inspection methods. (8)
- b) Explain various automated parts identification and data collection technologies. (8)

Unit-V

5. a) Explain various tests of flexibility in FMS. Also explain various types of flexibility in manufacturing. (4+4)
- b) Explain various functions of computer control system in FMS. (8)

OR

5. a) Explain extended enterprise and concurrent engineering concepts. Explain the three aspects of automation in brief. (2+2+4)
- b) Explain the various building blocks of lean manufacturing system. (8)

