Printed Pages : 4

EMT801

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 141801

Roll No.

B. Tech.

(SEM. VIII) THEORY EXAMINATION, 2014-15

ADVANCED MANUFACTURING SYSTEMS

Time : **3** Hours] [Total Marks : **100**

Note : Attempt all five questions, as instructed. Marks are indicated alongside.

1 Answer **any four** **5×4=20**

(a) What is automation? What are its types?

(b) What is CAM?

(c) Differentiate between Open loop and Closed loop NC system?

(d) What is full -form of CNC, DNC, NC and PLC?

(e) What do you mean by Total Quality Management?

(f) Write down the factors affecting make-buy decision?

2 Answer **any four** **5×4=20**

(a) What is adaptive control system'? Mention its advantages to the manufacturing technology?

(b) Explain in detail the economics involved in Quality Assurance?

(c) Discuss various process control techniques to accept the component?

(d) Define CNC Machine? Explain the advantages and disadvantages of CNC Machine?

(e) Write short notes on Concurrent Engineering?

(f) What do you mean by depreciation? Explain with example?

3 Answer **any two** **10×2=20**

(a) What do you mean by CAPP? Explain various types CAPP in detail'?

(b) What is Group Technology? Discuss in brief its applications in manufacturing. Give a list of the methods used for coding and classification of parts. Descrbe the two important types of coding schemes.

(c) Define FMS clearly by showing the various desirable features /components that are required for proper functioning with reference to current day manufacturing scene?

4 Answer **any two** **10×2=20**

(a) Write down the benefits usually cited for CNC machine compared to using manual alternative methods? Enlist any ten G codes and M codes?

(b) It is desired to determine how many vehicles will be required to satisfy demand for a particular AGVS. The system must be capable of making 40 deliveries/h. The following specifies the performance characteristics of the system:

Vehicle velocity	=	150 ft/min
Average distance travelled per delivery	=	450ft.
Pick-up time	=	45 s (0.75 min)

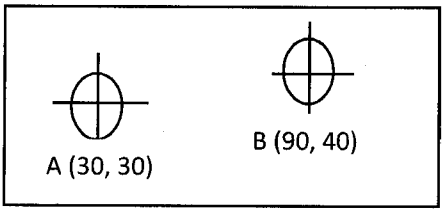
Drop-off time	=	45 s (0.75 min)
Average distance travelling		
empty	=	300 ft
Traffic factor	=	0.90

Determine the number of vehicles required to satisfy the delivery demand. Also determine the handling system efficiency.

(c) Define FMS. Explain various lay-outs of FMS. Mention advantages and disadvantages of FMS.

5 Answer **any two** **l0×2=20**

(a) Write MDI Programme to make a through hole in a C.I. plate as shown in figure below. Select suitable feed and speed for each operation. Hole size =10H6 mm. The plate is having initial hole of size 5 mm. The thickness of the plate is 30 mm. Explain clearly the number and type of the tools used for this purpose.

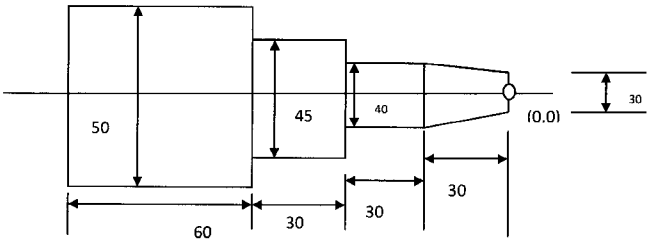


(b) Three holes of diameter 10 mm are to be drilled in a solid. The details are given below:

Absolute locations:	A	25,40 (mm)
	B	66,55 (mm)
	C	80,75 (mm)
Feed	150 mm/min	
Speed	1000 rpm	
R-plane	2 mm above the -work surface	
Over-run	1 mm	
Plate thickness	20 mm	

Prepare MDI part program by using canned cycle. Explain clearly the number and type of the tools used for this purpose.

(c) Write MDI part program for following job. (All dimensions are in mm)



Work material	=	Aluminium
Blank length	=	150 mm
Blank diameter	=	50 mm

Select suitable depth of cut, feed and speed. Explain clearly the number of cuts required for each surface.