

T. E. I. T. Sem V (old).

Manufacturing process & planning  
& systems

4/12/14

**(OLD COURSE)**

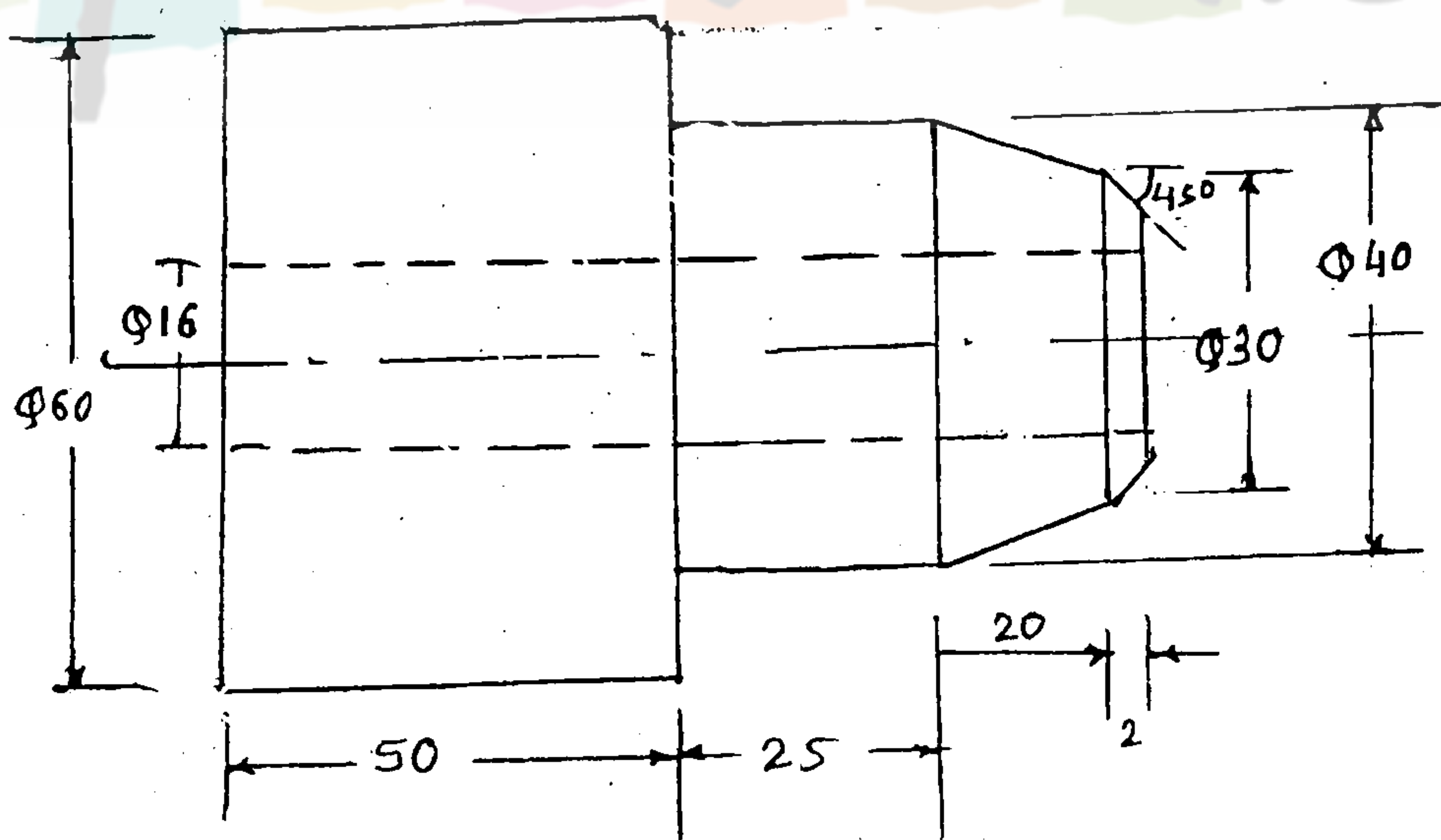
**QP Code : 12121**

(3 Hours)

[Total Marks : 100

- N.B. :** (1) Question No. 1 is **compulsory**.  
(2) Solve any **four** questions from the **remaining**.  
(3) Figures to **right** indicate **full** marks.  
(4) Assume **suitable** data wherever **necessary**.

1. (a) List any ten operations that can be performed on Lathe machine and explain any four with sketches. 10  
(b) Define ergonomics and explain its importance in manufacturing. 4  
(c) Define the terms : Quality, Quality Control and Quality Management. 6
2. (a) List the various operations performed on milling machine and explain any two. 6  
(b) What is Automation ? State its advantages. 4  
(c) How are polymers classified ? Describe properties and applications of any two commercially important polymers. 8
3. (a) For the given component drawing, prepare a suitable process plan. Mention clearly, the operation number, description of the operation, the machine used, tooling used and measuring equipments required. 12



- (b) Explain (i) CNC (ii) DNC - 1. 8
4. (a) Describe operator machine system. 5  
(b) What is role of forecasting in facility capacity planning ? 5  
(c) Differentiate between :— 10  
(i) Product Layout and Process Layout  
(ii) Open Loop & Closed Loop control system.

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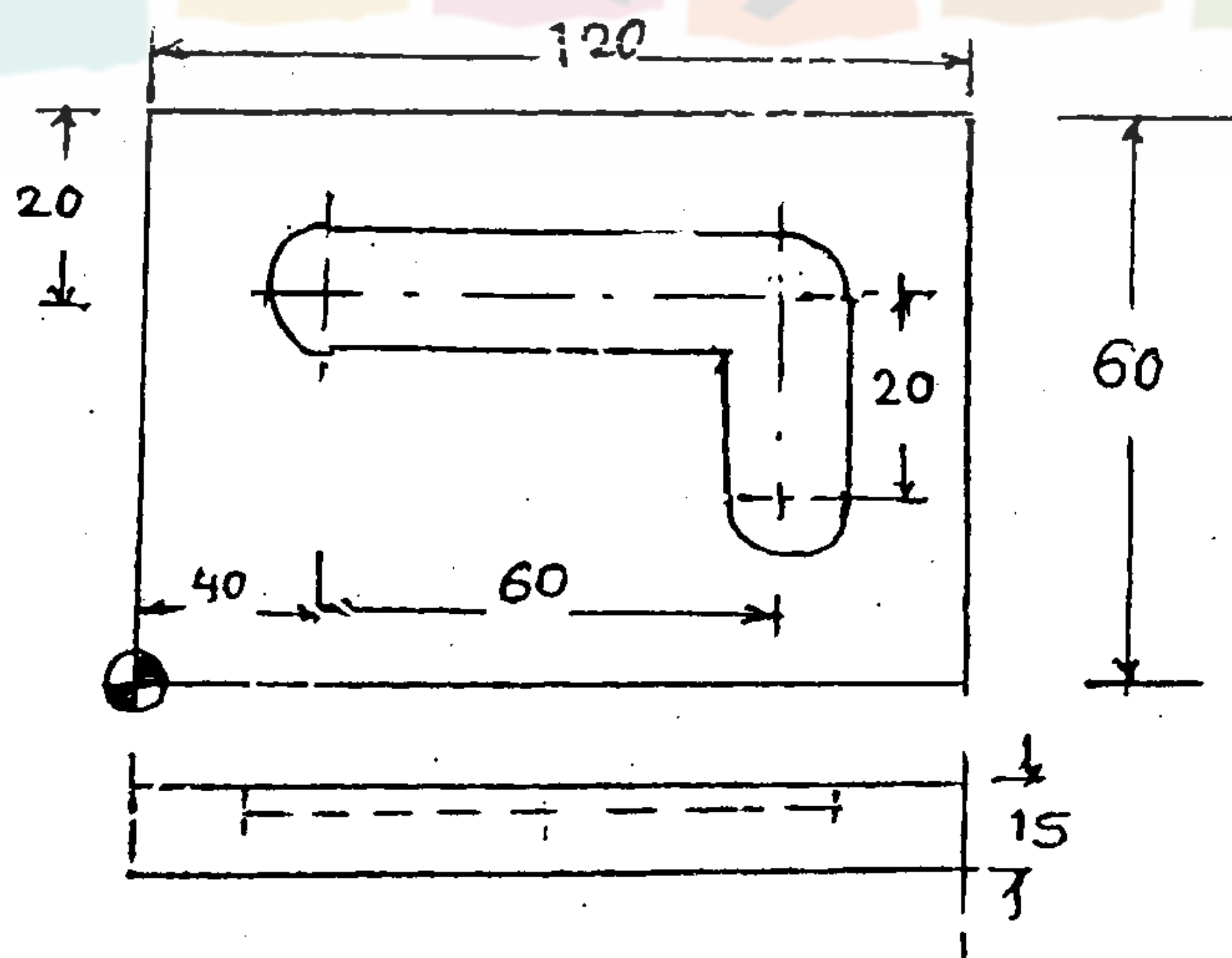
5. (a) No. of rust spots found in each sample of sheet metal of 0.1 sq.ft. area is noted down as follows. Draw appropriate control chart and state if the process is in control or not. 6

Sample No.	1	2	3	4	5	6	7	8	9	10
No. of defects found	7	6	9	8	5	9	10	7	8	6

- (b) Write note on robot co-ordinate system. 8  
 (c) List advantages and limitations of FMS. 6

6. (a) What role does demand management plays in — 12  
 (i) Make to stock environment  
 (ii) Assemble to stock environment  
 (b) Prepare a CNC part program for milling a slot, 6 mm wide & 3 mm deep as shown in figure. 8

Take spindle speed & feed rates in rpm & mm/min respectively for the operation as follows :  
 speed – 800 rpm & feed 100 mm/min for vertical milling and 350 mm/min for horizontal milling.



7. Write notes on :— 20  
 (a) Master Production Schedule  
 (b) MRP  
 (c) Lean Manufacturing  
 (d) Oxy-acetelene gas welding.