

T. E. (I.T.) sem V (Old) O.S.C.D NP-2014

---

**(OLD COURSE)**

**Q.P. Code : 11997**

(3 Hours)

[ Total Marks :100

- N.B. :** (1) Question No. 1 is compulsory.  
(2) Attempt any **four** questions from the remaining questions.  
(3) Assume suitable **data** wherever **necessary**.

1. (a) What is Kernel ? Describe briefly the approaches of designing kernels. 10  
(b) What is meant by inter process communication? Explain shared memory and message passing. 10
2. (a) What is disk scheduling? Explain various disk scheduling algorithm. 10  
(b) What are the four conditions that create deadlock? Explain dead lock prevention and avoidance techniques 10
3. (a) Draw and explain the architecture of RTOS. 10  
(b) Calculate the Hit and faults using FIFO and LRU page replacement policies for the following page sequence (2,3,5,4,2,5,7,3,8,7) assume page frame size is 3. 10
4. (a) What is semaphore? Explain different types of the semaphores 10  
(b) Discuss the different approaches of I/O buffering provided by the O.S. 10
5. (a) Explain the file accessing methods 10  
(b) Explain DMA in terms of system concurrency ? What is its implication on hardware design ? 10
6. (a) Explain the pre-emptive and the non-pre-emptive algorithms 10  
(b) What is thread? Explain user level threads and kernel level thread 10
7. Write short note on :- 20
  - (a) Distributed OS
  - (b) System calls
  - (c) Monitor
  - (d) Application of the RTOS

**(OLD COURSE) QP Code 12079**

(3 Hours)

[Total Marks : 100

- N.B.:** (1) Question No. 1 is compulsory.  
(2) Assume suitable data if required.  
(3) Solve any four out of remaining questions.

1. Solve any four :- 20
    - (a) Compare ASK, FSK, PSK Modulation techniques ?
    - (b) How channel capacity is improved by cell splitting and cell sectoring ?
    - (c) Differentiate between packet switching, virtual switching and circuit switching ?
    - (d) What is the frame structure in HDLC ?
    - (e) How the frames are formed using different techniques at Data Link Layer ?
  
  2. (a) Explain GSM architecture along with GSM channels in detail? 10  
(b) Compare the different evolutions of second, third and fourth generation cellular system? 10
  
  3. (a) How call set up and release procedure in ISDN ? 10  
(b) What are Multiple access techniques in cellular system ? 10
  
  4. (a) If the 7-bit Hamming Code Word received by a receiver is 1101101 assuming the even parity state whether the received code word is correct or wrong ? If wrong, locate bit in error ? 10  
(b) Explain Bridges used in Wireless Local Area Network (WLAN). 10
  
  5. (a) Explain Telecommunication Management Network (TMN) ? Also focus on reference points used in it? 10  
(b) What are different techniques used for traffic shaping? 10
  
  6. (a) Explain in detail modulator and demodulator for Binary Phase Shift Keying (BPSK) ? 10  
(b) What are the typical characteristics of connection-Oriented and Connectionless service ? What are merits and demerits of each? 10
  
  7. Write a short note on (any four) :- 20
    - (a) Bluetooth
    - (b) BFSK
    - (c) Handoff in cellular system
    - (d) Numbering system used in GSM
    - (e) Error detection methods
-

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

Manufacturing process & planning  
& systems

4/12/14

**(OLD COURSE)**

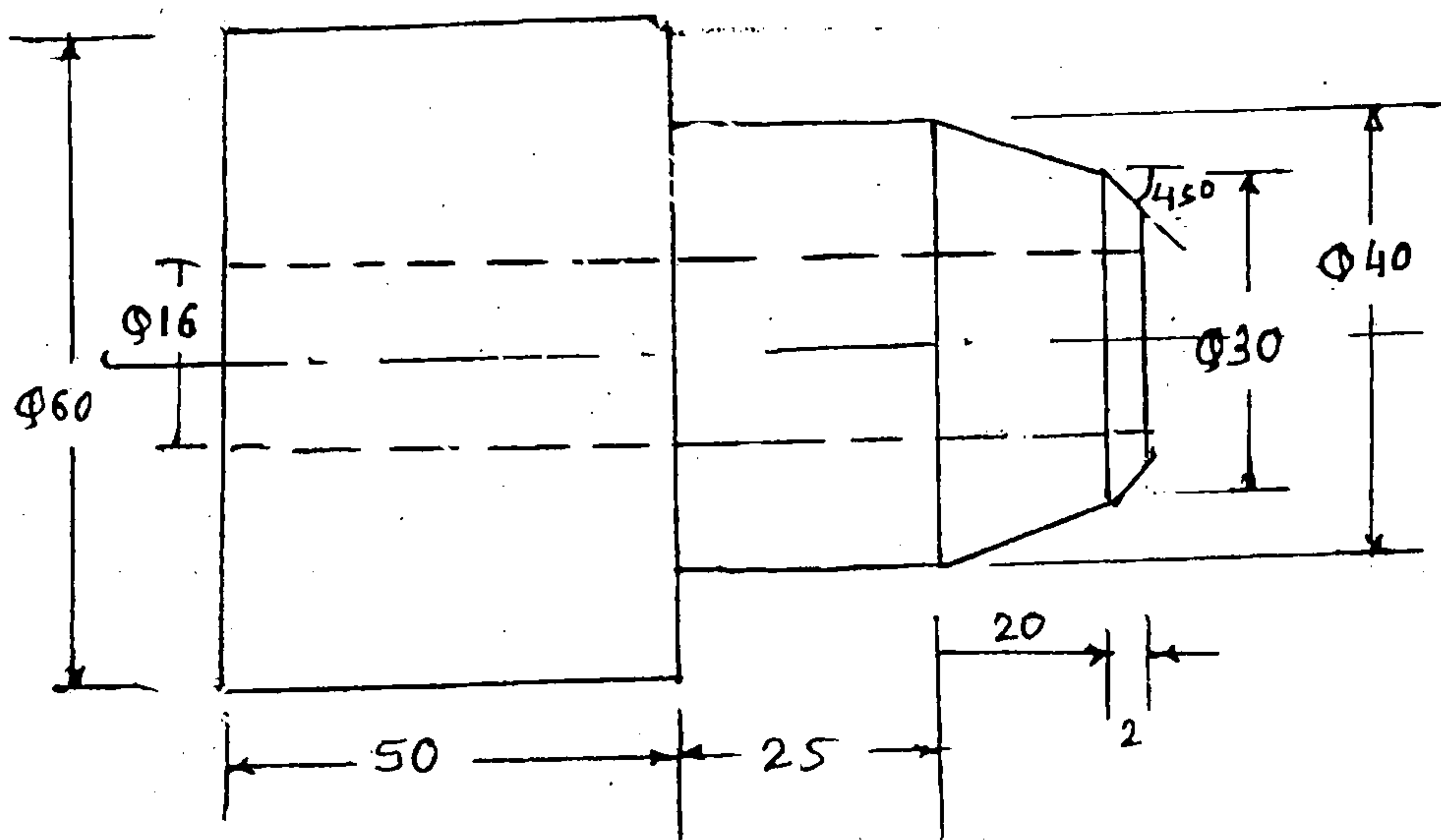
**QP Code : 12121**

(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.

[ TURN OVER

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

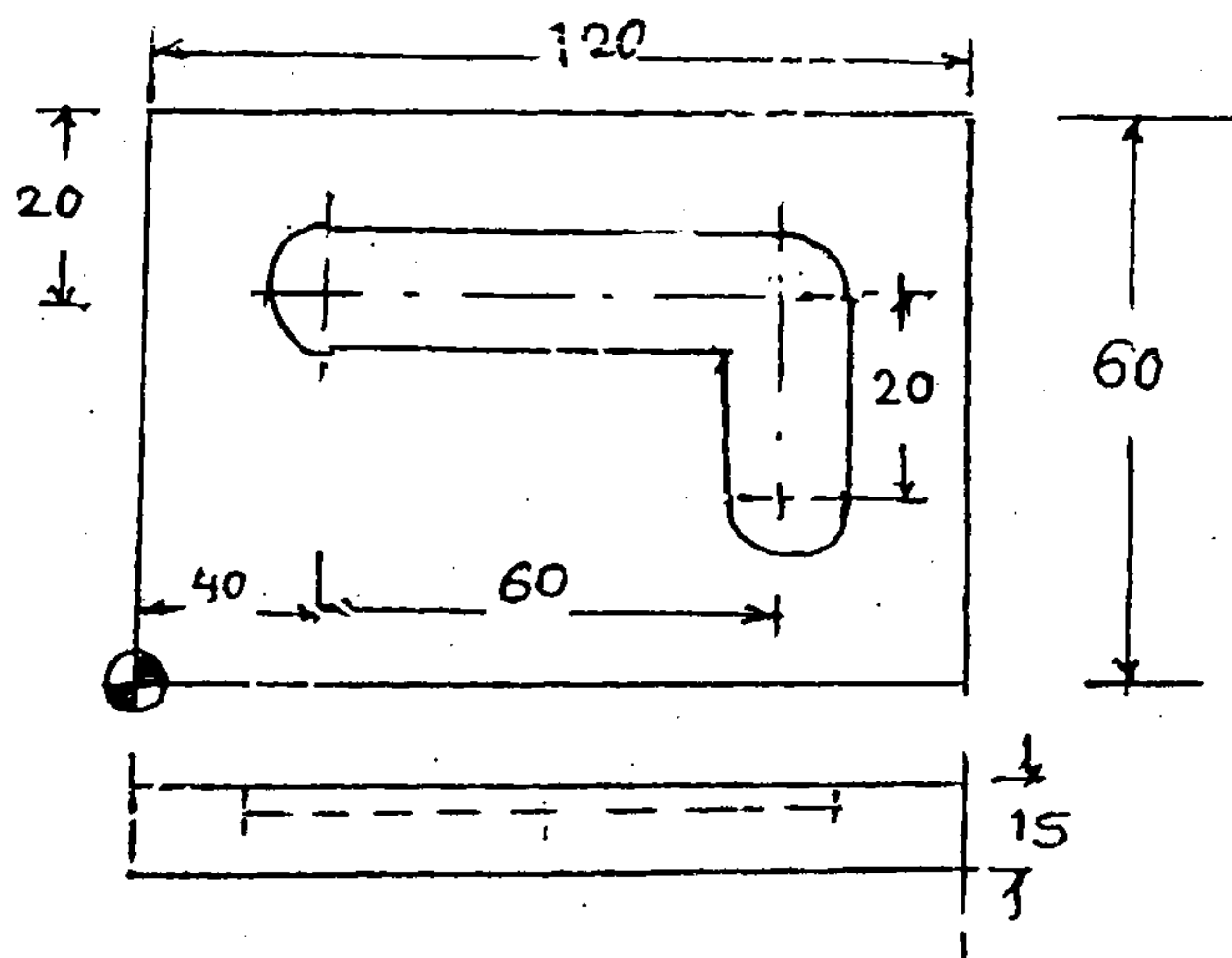
|                      |   |   |   |   |   |   |    |   |   |    |
|----------------------|---|---|---|---|---|---|----|---|---|----|
| Sample No.           | 1 | 2 | 3 | 4 | 5 | 6 | 7  | 8 | 9 | 10 |
| No. of defects found | 7 | 6 | 9 | 8 | 5 | 9 | 10 | 7 | 8 | 6  |

- (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.