52 (4) MIPR 4·1

2016

MICROPROCESSOR

Paper : 4·1

Full Marks : 60

Time : Three hours

The figures in the margin indicate full marks for the questions.

1. (a) What do you mean by Instruction Word Size ? Give *one* example of 2-byte instruction. 1+1=2

   (b) What do you mean by general purpose and special purpose registers ? 2

   (c) What do the following epcodes imply IN, MOV, HLT, LXI. 2

   (d) What is stored in accumulator and status of S, Z and CY flag after subtracting 65H from 97H (stored in accumulator) ? 2

Contd.

(e) Write the difference between hardware and software interrupts. 2

2. Answer ***any four*** : 4×5=20

(a) Draw necessary diagram and explain the demultiplexing of $AD_7 - AD_0$.

(b) Find the total delay to execute the following instructions with T-states if the clock frequency of the system is 3*MHz*.

	MVI	C, FFH	requires 7 T-states
LOOP :	DCR	C	requires 4 T-states
	JNZ	LOOP	requires 10/7 T-states

(c) Draw the timing diagram for the following memory read operation.

Instruction	Machine Code	Memory Location
MVI A, 32H	3EH	2000 H
	32H	2001 H

(d) Write the different addressing modes in detail.

(e) Explain different flags in 8085.

3. Answer ***any two*** : 2×6=12

(a) Write the steps of the 8085 interrupt process.

(b) Illustrate the procedure to generate Read / Write control signals for both memory and I/O devices.

(c) Draw the timing diagram for the following instruction.

Instruction	Machine code	Memory address
OUT 01H	D3	2050H
	01	2051H

4. Answer ***any two*** : 2×5=10

(a) Load two numbers in register *B* and *C*. Subtract *B* from *C*. If the result is in 2's complement then convert the result in absolute magnitude and store the result in memory location 8070H, otherwise store the content of the accumulator directly in 8070H.

Write in assembly language programme for the above stated problem.

(b) Write a 8085 assembly language program to find the smallest number in a list of 20 data bytes.

(c) Write an assembly language program to find the sum of two 16-bit numbers.

5. Write short notes on : ***(any two)*** 2×4=8

(a) Counter and Time delays

(b) Subroutine and its use

(c) Maskable interrupts

(d) Opcode fetch machine cycle