Exam.Code:0922
Sub. Code: 33527

2055

B.E. (Information Technology)

Fourth Semester

PCIT-401: Microprocessor and Assembly Language Programming

Time allowed: 3 Hours Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. I which is compulsory and selecting two questions from each Unit.

x-x-x

I. Attempt the following:-

a) What is the primary function of timing and control unit in 8085 microprocessor?

b) What is addressing mode? How many types of addressing modes are in 8085? Describe each in detail.

c) What are the steps of input output interfacing? Draw the interfacing of an LED with 8085.

d) Explain TRAP Interrupt.

e) What are the drawbacks of software delay techniques for designing real world applications and how one can overcome this? (5x2)

UNIT - I

II. a) In 8085, Explain why there are some 8 bit and 16 bit registers in 8085 microprocessor? Further, what is the significance of Program Counter and stack pointer register?

b) Illustrate graphically the steps and the timing of data flow when the instruction code 4F of MOV C,A , stored in memory location 2027H , is being fetched. (2x5)

III. **a)** Analyze the role of following program and identify the **Memory Address** starting at 2070H and **number of bytes** of each instruction for the following code:

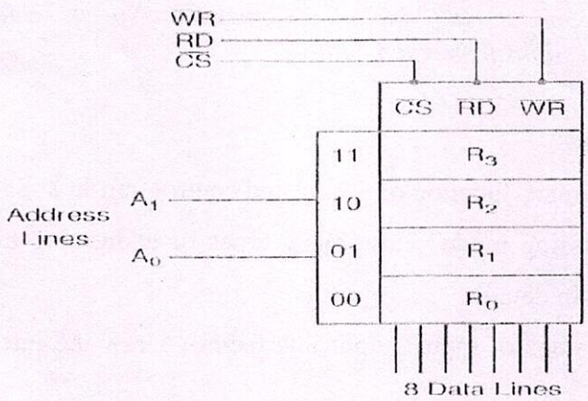
```
MVI A,8FH
MVI C,66H
SUB C
ANI 0FH
STA 2070H

HLT
```

b) Describe Memory mapped I/O and Peripheral I/O in terms of following characteristics:

Execution speed and Hardware requirements (2x5)

P.T.O.

IV. a) Calculate the status of all the signals if 8 bit data is read from register R3 in reference to the diagram shown



b) Explain the following instructions
(i) LDAX B/D (ii) INX Rp (2x5)

UNIT - II

V. a) Analyze the following program and find the time delay value, if the internal clock frequency of 8085 microprocessor is 3MHz, considering respective T states for the instructions given.

MVI B,FFH	7 T-states
LOOP: DCR B	4 T-states
JNZ LOOP	10/7 T-states
RET	10 T-States

b) Show graphically, how does the program sequence changes with following instructions, by taking example.
(i) PUSH
(ii) POP (2x5)

VI. a) Differentiate Multiple Ending and Nesting Subroutine with example.

b) Differentiate 8085 interrupts based on Maskable and Non-Maskable characteristics. Indicate the nature of signals that will trigger RST 7.5, RST 6.5, RST 5.5 and INTR. (2x5)

VII. Write short note on:-
a) 8255 (Programmable Peripheral Interface)

b) Compute the contents of control word format of 8255 in Bit set/reset mode for the following:
(i) Reset bit 7 of port C
(ii) Set bit 5 of port C (2x5)

x-x-x