MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WEST BENGAL

Paper Code : CS-502

MICRO-PROCESSOR AND MICRO-CONTROLLER

Time Allotted : 3 Hours   *Full Marks* : 70

The figures in the margin indicate full marks.
Candidates are required to give their answers in their own
words as far as practicable.

GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for any *ten* of the following : $10 \times 1 = 10$

i) The instruction, MOV AX, 0005H belongs to the address mode

   a) register

   b) direct

   c) immediate

   d) register relative.

ii) Suppose all flags of 8085 are zero before executing the following instructions. Which flag will be set after executing all the following instructions ?

   MVI   B, FF_H

   MVI   C, FF_H

   INX   B

   a) S   b) Z

   c) CY   d) none of these.

iii) In 8086 Microprocessor, (CS) = 2347_H, (IP) = 8240_H. What would be the physical address ?

   a) $2B6B0_H$ b) $0A587_H$

   c) 8240_H d) None of these.

iv) To perform Handshake I/O using 8255 PPI, which mode should be chosen ?

   a) Mode 0   b) Mode 1

   c) Mode 2   d) Both (a) and (b).

v) HOLD state of INTEL 8085 can be in between two consecutive

a) instructions

b) machine cycles

c) clock cycle.

vi) Clock signal of 8086 with duty cycle is

a) 20%   b) 30%

c) 33%   d) 50%.

vii) The clock out signal of 8085 is at frequency equal to

a) crystal frequencies

b) half crystal frequencies

c) 1/3 crystal frequencies

d) double of crystal frequencies.

viii) For the 8086 instructions MOV AX, [BP + SI], the default segment used is

a) CS   b) DS

c) SS   d) ES.

ix) Whenever the PUSH instruction is executed, the stack pointer is

a) incremented by 1   b) decremented by 1

c) incremented by 2   d) decremented by 2.

x) The size of 8086 queue is

a) 2 bytes   b) 4 bytes

c) 6 bytes   d) 8 bytes.

xi) DAD instruction is used to

a) decimal adjust delay

b) add register pair to H-L registers

c) don't care and add

d) decimal adjust division.

xii) The number of 16 bit timer/counter registers present in 8051 is

a) 2   b) 3

c) 4   d) 5.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following.   3 × 5 = 15

2. Write the accumulator bit pattern of SIM and RIM instruction.

3. What are the different addressing modes available in 8085 microprocessor ?

4. a) What are the functions of ALE, READY and Hold signals ?

   b) Define machine cycle and instruction cycle.   3 + 2

5. Suppose CALL instruction is not available in 8085. To compensate this, write the sequences of 8085 instructions that you would like to execute to call a subroutine named SUBRT.

6. How does 8086 Microprocessor function differently in MIN mode and in MAX mode of operation ?

GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following.   3 × 15 = 45

7. Write down the step of interrupt of 8085 in detail (i.e. what happen when interrupt occurs in 8085) ? What are the functions of the following instructions ?

   a)   EI

   b)   SIM

   c)   RIM   7 + 2 + 3 + 3

8. What are the different modes of operation followed in 8255 PPI ?

9. What are the different timer SFRs available in 8051 microcontroller ? Explain different functions and modes available in TMOD timer SFR ?

10. Draw the pin diagram of 8086. Explain the register structure of 8086.

CS/B.TECH/CSE/ODD SEM/SEM-5/CS-502/2016-17

11. Write short notes on any *three* of the following :   3 × 5

   a)   Block diagram of 8085 microprocessor

   b)   Software interrupts of 8085 microprocessor

   c)   Write a program to convert BCD to Binary number

   d)   Addressing modes of 8051.

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