BRAINWARE UNIVERSITY

Term End Examination 2018 - 19

Programme – Bachelor of Computer Applications

Course Name - Microprocessor and Microcontroller

Course Code – BCA403

(Semester – 4)

Time allotted: 3 Hours **Full Marks : 70**

[The figure 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) 10 x 1 = 10

1. *Choose the correct alternative from the following*

(i) Microprocessor speed depends on which parameter?

a. Clock b. Data Bus Width

c. Address Bus Width d. None of these

(ii) The addressing mode of the instruction MVI is

a. Immediate b. Implied

c. Register d. Direct

(iii) Program Counter is a _____ register.

a. General Purpose b. Special Purpose

c. shift d. None of these

(iv) Which of the following is a user programmable register?

a. Memory Address Register b. Accumulator

c. Program Counter d. All of these

(v) The content of the Accumulator is 08 H then the ADI 80 H instruction was executed. The content of the accumulator is

a. 80 H b. 08 H

c. 88 H d. None of these

(vi) JNC 2050H is a _____ instruction.

a. 1 Byte
b. 2 Byte
c. 3 Byte
d. 0 Byte

(vii) The interrupt line having highest priority is

a. RST 7.5
b. READY
c. TRAP
d. INTR

(viii) In DAD instruction, one of the operand must stored in

a. BC register pair
b. DE register pair
c. HL register pair
d. Accumulator

(ix) READY is used for

a. Input
b. Output
c. Both (a) and (b)
d. None of these

(x) Program Status Word refers to

a. Accumulator and Flag Register
b. HL register pair
c. BC register pair
d. Stack Pointer and Program Counter

Group – B

(Short Answer Type Questions) 3 x 5 = 15

Answer any *three* from the followings

2. Write the utility of following instructions - [5]

   (i) XRA A (ii) LHLD 8000 H (iii) JMP 3000H (iv) LDA 3000H (v) SBB B

3. Discuss the 'fetch' and 'execute' operations of 8085 microprocessor. [5]

4. Write a short note on DMA. [5]

5. If the system clock is 3 MHz, find the time to execute the given instruction code: [5]

   MVI A, (08) H

   MVI B, (05) H

   SUB B

   STA 3200 H

   HLT

6. Explain the functionality of Flag register of Intel 8085. [5]

Group – C

(Long Answer Type Questions) 3 x 15 = 45

Answer any *three* from the followings

7. (a) Write an Assembly Language Program for Intel 8085 to compute the multiplication result of two 8-bit numbers. [5]
   (b) Discuss the advantages and disadvantages of memory mapped I/O scheme. [5]
   (c) Distinguish between maskable and non-maskable interrupts. [5]

8. (a) Draw the timing diagram for STA 3000H instruction. [5]
   (b) Explain RIM and SIM. [5]
   (c) Draw the Pin diagram of Intel 8085A chip. [5]

9. (a) Write an Assembly Language Program for Intel 8085 to compute the addition of two 8-bit numbers. [7]
   (b) What will be the contents of the accumulator and flag after execution of the following instructions from a program sequentially? [5]

   MVI A, 01

   MVI B, 02

   ADD B

   XRA A

   HLT

   (c) Explain the Instruction format of Intel 8085. [3]

10. (a) Write an Assembly Language Program of division to calculate quotient of two 8-bit numbers. [5]
    (b) What is Decoder? Why it is required with 8085? Explain briefly. [6]
    (c) Explain the utility of DMA Controller. [4]

11. (a) Write an Assembly Language Program for Intel 8085 to find the subtraction of two 8-bit numbers. [5]
    (b) Discuss the Flag registers of 8085. [5]
    (c) Interface Intel 8085 with two 16 KB RAM and two 16 KB ROM. [5]
