BRAINWARE UNIVERSITY

Term End Examination 2023-2024
Programme – Dip.RA-2022
Course Name – Microprocessor and Microcontroller
Course Code - ECPC401
(Semester IV)

Full Marks : 60 **Time : 2:30 Hours**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A
(Multiple Choice Type Question) 1 x 15=15

1. *Choose the correct alternative from the following :*

(i) Identify the first microprocessor from the following

a) 4001 b) 4002
c) 4003 d) 4004

(ii) Identify how many address lines are present in 8085 microprocessor

a) 16 b) 20
c) 8 d) 24

(iii) Identify which of the following registers are grouped to form the register AX

a) AH & AL b) BH & BL
c) CH & CL d) DH & DL

(iv) The length of the instruction MOV A, C is observed as

a) One byte b) two byte
c) three byte d) four byte

(v) Determine number of T-states to execute the instruction DCX Rp (Rp is register pair)

a) 6 b) 4
c) 3 d) 1

(vi) Identify immediate addressing mode from the following instruction

a) MOV AX, [2000] b) MOV BX, 2000
c) MOV AX, [SI] d) MOV AX, BX

(vii) Identify four byte instruction from the following

a) MOV AX, 2345 b) MUL BX
c) DIV CL d) ADD AX, [BP+0200]

(viii) Determine the T-State required to execute the instruction LXI H, 2400 H.

a) 10 b) 13
c) 7 d) 16

(ix) Determine how many machine cycle is required to execute MOV A, C

a) One
b) Two
c) Three
d) Four

(x) The instruction MOV A, 40 indicates that its addressing mode is belong to

a) direct addressing
b) indirect addressing
c) index addressing
d) register addressing

(xi) The compiler is illustrated as

a) faster than the interpreter
b) slower than interpreter
c) an interpreter
d) a single step process

(xii) The technique of assigning a memory address to each I/O device in the computer system is described as:

a) memory-mapped I/O
b) ported I/O
c) dedicated I/O
d) wired I/O

(xiii) The bits of control word of 8253 to select a counter are

a) SC0SC1
b) RW0RW1
c) M0M1M2
d) BCD, RW0 & RW1

(xiv) When the microcontroller executes some arithmetic operations, then indicates the flag bits of which register are affected?

a) PSW
b) SP
c) DPTR
d) PC

(xv) The components of a microcontroller are indicated as

a) RAM, ROM, I/O devices, serial and parallel ports and timers
b) CPU, RAM, I/O devices, serial and parallel ports and timers
c) CPU, RAM, ROM, I/O devices, serial and parallel ports and timers
d) CPU, ROM, I/O devices and timers

Group-B
(Short Answer Type Questions) 3 x 5=15

2. Illustrate briefly maskable and nonmaskable interrupts of 8085 microprocessor. (3)

3. Describe different general purpose registers of 8085 microprocessor. (3)

4. Define logical address and physical address. What are the differences between logical and physical address. (3)

5. Distinguish between microprocessor and micro-controller. (3)

6. Write a program for logical OR operation of two 8-bit number using 8085 microprocessor. (3)

OR

Write a program for logical AND operation of two 8-bit number using 8085 microprocessor. (3)

Group-C
(Long Answer Type Questions) 5 x 6=30

7. Describe the flag register of the 8085 microprocessor in brief. (5)

8. Classify 8085 instructions in various groups. Give a list of examples of instruction for each group. (5)

9. With example explain various addressing modes of 8085 microprocessor. (5)

10. Write an assembly language program in 8085 microprocessor to find multiplication of two 8 bit numbers. Result may be of 16 bit numbers. (5)

11. Describe General purpose register, Stack pointer register and Base Pointer (BP) register related to 8086 microprocessor (5)

12. Distinguish between hardware and software interrupt. (5)

OR

With example, explain and classify the instructions of 8085 microprocessor on the basis of the length of instructions. (5)

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