BRAINWARE UNIVERSITY

Term End Examination 2023-2024
Programme – B.Tech.(RA)-2022
Course Name – Microprocessor and Microcontroller
Course Code - PCC-ECR403
(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) The memory capacity of 8085 microprocessor is recognized as

   a) 64 K   b) 1 MB
   c) 16 MB   d) 640 B

(iii) Identify How many number of output pins are present in 8085 microprocessors

   a) 27   b) 40
   c) 19   d) 24

(iv) Which of the following are present in 8085 microprocessor?

   a) 8 bit data bus   b) 8-bit address bus
   c) 8-bit control bus   d) 8-bit interrupt lines

(v)   The accumulator is 16 bit wide of 8086 and is recognized as

   a) AX   b) AH
   c) AL   d) DL

(vi) In 8085, the16 bit registers is named as

   a) Stack pointer   b) Accumulator
   c) Flag register   d) None of these

(vii) The instruction STA 3526H indicates that its addressing mode is

   a) direct addressing mode   b) indirect addressing mode
   c) register addressing mode   d) Immediate addressing mode

(viii) The instruction LXI H, 2500 H indicates that its addressing mode is

   a) direct addressing mode   b) indirect addressing mode
   c) register addressing mode   d) Immediate addressing mode

(ix) Determine the number of machine cycle to execute the instruction ADD C

a) 1 Machine cycle
b) 2 Machine cycle
c) 3 Machine cycle
d) 4 Machine cycle

(x) The instruction, MOV AX, 1234H indicates that its addressing mode is

a) register addressing mode
b) immediate addressing mode
c) based indexed addressing mode
d) direct addressing mode

(xi) Identify the CALL location of TRAP instruction

a) 0023H
b) 0032H
c) 0042H
d) 0024H

(xii) Identify in which of the following modes 8251 operates

a) synchronous mode
b) asynchronous mode
c) synchronous and asynchronous mode
d) none of these

(xiii) 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

(xiv) 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

(xv) Indicate in which of the following is 16 bit register in 8051 microcontroller?

a) DPTR
b) IE
c) TMOD
d) PC

Group-B
(Short Answer Type Questions)

3 x 5=15

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

3. Explain the advantages and disadvantages of memory mapped I/O and I/O mapped I/O scheme. (3)

4. Sketch the timing diagram for the execution of the instruction MVI B, 07H. (3)

5. Illustrate briefly maskable and nonmaskable interrupts of 8085 microprocessor. (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. Illustrate the operation of following instructions when they are executed: (5)
   (a) LXI H, 2600 H (b) ANI B, 34H (c) ANA B (d) CMC (e) JZ 8000H

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

9. Write down an assembly language program to block of data transfer one memory location (5) to another memory location.

10. An 8085 program adds the hex numbers 2FH and 32H and places the result in its (5) accumulator. Evaluate the status of 8085 flags CY, P, AC, Z, S on completion of this additions.

11. Explain the features of 8051 microcontroller in brief. (5)

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

OR

With examples, explain the various addressing modes of 8086 microprocessor. (5)

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