| 2018 | III | 17 | 1100 | **V – 468** | (E) |

COMPUTER SCIENCE
PAPER - II (D-9)

| Time : 3 Hours | 4 Pages | Max. Marks : 50 |

Instructions : (1) *All questions are compulsory.*
(2) *Figures to the right indicate full marks.*
(3) *Draw neat diagrams wherever necessary.*
(4) *Use of any type of calculator is not allowed.*
(5) *Comments are must in Assembly Language Programs.*

1. (A) Select correct options and rewrite the following :

   (a) Intel 8085 is a/an _____ bit Microprocessor.   1

   (i)   16

   (ii) 4

   (iii) 8

   (iv) 32

   (b) The instruction PCHL belongs to _____ group.   1

   (i)   Data transfer

   (ii) Logical

   (iii) Arithmetic

   (iv) Branching

   (c) Stack pointer of 8085 holds _____.   1

   (i)   8 bit address

   (ii) 16 bit data

   (iii) 16 bit address

   (iv) 8 bit data

(d) The instruction set of intel 8051 Micro-controller contains total _____ instruction.   **1**

      (i)   111

      (ii)   72

      (iii)   74

      (iv)   100

(B)   Answer **any two** of the following :

  (a)   Explain the function of following pins on Intel 8085 :   **3**

      (i) $\overline{RD}$

      (ii) $\overline{WR}$

      (iii)   IO / $\overline{M}$

  (b)   Explain direct and immediate addressing modes of Intel 8085 with suitable examples.   **3**

  (c)   Explain any three important features of pentium processor.   **3**

2.   (A)   Answer **any two** of the following :

  (a)   Write the RAM and ROM size of 8048, 8049 and 8050 Microcontrollers.   **3**

  (b)   Explain Fiber-optic Cable with a neat diagram.   **3**

  (c)   Explain the conditional CALL instructions of Intel 8085.   **3**

 (B)   Answer **any one** of the following :

  (a)   Draw the functional block diagram of Intel 8085.   **4**

  (b)   Explain in brief the following access method :   **4**

      (i)   Contention

      (ii)   Token Passing

3.   (A)   Answer **any two** of the following :

  (a)   What do you mean by Interrupt ? List all the software interrupts of Intel 8085.   **3**

  (b)   The Registers A and C of 8085 contain the data E2H and 47_H. What will be the contents of Accumulator in Hex digits after execution of each of the following instructions independently ?   **3**

      (i)   SUB C

      (ii)   XRA C

      (iii)   ADD C

  (c)   Draw a bit pattern of flag register of Intel 8085 and write the functions of any four flags.   **3**

(B) Answer **any one** of the following :

    (a) Explain in brief the following connectivity devices :   4

        (i) Repeater

        (ii) Router

    (b) Define the terms - Machine Cycle, Instruction Cycle and T-state with a timing diagram.   4

4. (A) Answer **any two** of the following :

    (a) Explain the function of following instructions of Intel 8085 :   3

        (i) L × I H, 2900H

        (ii) LDA 6605H

        (iii) PUSH B

    (b) Explain the function of ALU with a simple block diagram.   3

    (c) What do you mean by Protocol ? Explain the concept of TCP/IP Protocol.   3

(B) Answer **any one** of the following :

    (a) What is Microcontroller ? State any six important features of Intel 8051 Microcontroller.   4

    (b) Explain Ring and Star Topologies with simple diagrams.   4

5. Answer **any two** of the following :

    (a) Write an Assembly Language Program to multiply an 8-bit number stored at 4301H by another 8-bit number stored at 4302H. Store the result at the location 4303H and 4304H beginning with LOB. (Lower Order Byte)   5

    (b) Write an Assembly Language Program to fill in the memory locations starting from 6900H and onward with the decimal numbers 0 to 99.   5

    (c) Write an Assembly Language Program to take the 2's complement of an 8-bit number stored at 3301H. Store the result at the memory location 3302H.   5

OR

5. Answer **any two** of the following :

   (a) Write an Assembly Language Program to count the occurrence of the data byte ACH in a memory block stored from 7401H to 7405H. Store the count at the memory location 7406H.   5

   (b) Write a subroutine in assembly language to fill the memory locations 7301H to 73FFH with the hexadecimal numbers 01H to FFH respectively.   5

   (C) Write an Assembly Language Program to count the total number of even data bytes occuring in a block of data stored from 9201H to 920AH. Store the result (count) at the memory location 9500H.   5

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