PNS SCHOOL OF ENGINEERING &TECHNOLOGY

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1ST INTERNAL ASSESSMENT EXAM QUESTIONS & ANSWER

SUB-Microprocessor and Microcontroller (TH-3)

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Internal Assessment : 2023
Subject : Microprocessor & Microcontroller (Th-3)
4th Semester
Branch :Computer Science / ETC Engineering

Time : 1 Hour   **F.M. : 20**

1.   Answer all the questions .   [2 x 5]

    (a)   Define Microprocessor. Give any two difference between Microprocessor and Microcomputer.

    (b)   What is the function of stack pointer ?

    (c)   Why address bus is unidirectional ?

    (d)   What is the function of HOLD & HLDA Pin ?

    (e)   What is the difference between MOV and MVI instruction.

2.   Answer the following questions (any Two)   [5 x 2]

    (a)   Explain 1-byte, 2-byte, 3-byte instructions with example.

    (b)   Explain the different types of Addressing Modes used in 8085 Microprocessor.

    (c)   Explain various Arithmetic and Logical instructions with examples.

❖ ❖ ❖

1-

(a) when a single CPU is built on a single IC chip, that IC chip is known as microprocessor.

Microprocessor

→ IC chip
→ Only CPU

Microcomputer

→ Digital computer.
→ Input device, Memory, Output devices, CPU.

(b) Stack pointer

→ It is a 16-bit SPR.
→ It is used to store the address of stack Top.

(c) In address bus, the address bits are flows from microprocessor to the peripherals so A-Bus is Unidirectional.

(d) HOLD-When microprocessor requires A-Bus and D-Bus

   HLDA-HOLD Acknowledgement signal.

(e) MOV

→ 1-byte instruction.
→ Move operation.

(e) MVI

→ 2-byte instruction.
→ Move immediate operation.

2-

(a) 1-byte

→ Mnemonic followed by Registers.
   For e.g.; MOV   B,C

   2-byte

→ Mnemonics followed by 8-bit date.
   For e.g.; MVI B,17H.

   3-byte

→ Mnemonics followed by 16-bit data, or address.
   For e.g.; JMP 2085H

2-

(b)   Addressing Modes
   (i)   Direct- Address of data is given.
         For e.g.; STA 2037H
   (ii)   Register- Data is in Registers.

         For e.g.; MOV C,D

   (iii)   Register Indirect -Data is in Register Pair.
         For e.g.; LXI H,2500

                  MOV A,M →Register Indirect
                  HLT

(iv)   Immediate – Data is given.

    For e.g.; MVI B,18H

(v)   Implicit- Data is in Accumulator.

    For e.g.; CMA, RAR, RAL

2-

(c)   <u>Arithmetic Instructions</u>

ADD B→ Adds contents of B into accumulator.

SUI 37H→ Subtract 37H from accumulator.

INR c→ Contents of C increases by1.

<u>Logical Instructions</u>

ANA B→ Logical AND B With Accumulator.

ORI 45H→ Logical OR with 45H.

CMA→ Complement the contents of Accumulator.