NKT/KS/17/5187

Bachelor of Science (B.Sc.) Semester—V (C.B.S.) Examination

FUNDAMENTALS OF MICROPROCESSOR

Paper—2

(Electronics)

Time : Three Hours] [Maximum Marks : 50

N.B. :— (1) **ALL** questions are compulsory and carry equal marks.

(2) Draw neat diagram wherever necessary.

EITHER

1. (A) Explain the need of address and data multiplexing. How is demultiplexing of address and data bus achieved ?

Illustrate how flags are affected after ALU operation. 5+5

OR

(B) Explain the function of Instruction Decoder (ID) and Timing and Control Unit (TCU) of 8085.

Explain fetch and execution cycle in 8085 microprocessor. 5+5

EITHER

2. (A) Explain the following instructions with one suitable example :—

(1) SHLD addr

(2) STAX B

(3) STA addr

(4) LXI B, 16 bit data

(5) MVI M, 8 bit data. 10

OR

(B) Let the content of HL-pair be FFFF H. What will be the content of HL-pair after the execution of following instructions independently ?

(1) INR H

(2) INR L

(3) INX H

(4) INR M

(5) DAD H

Illustrate the various addressing modes of microprocessor 8085. 5+5

EITHER

3. (A) What is Stack ? How is stack initialized ? Explain stack operation with example.

IF [A] = 7 B H and [C] = 2 A H

What will be the content of Reg. A, after the execution of each instruction separately

(1) ANA C

(2) ORA C

(3) XRA C

(4) ANI 46 H ? 6+4

OR

(B) Explain following instructions :—

(1) IN port address

(2) HLT

(3) NOP

(4) XTHL

What is Subroutine ? Explain the need of subroutine. With example explain subroutine operation. 4+6

EITHER

4. (A) Give the need of interfacing. Mention the various schemes of data transfer. Explain any two programmed data transfer schemes in brief. 2+2+6

OR

(B) Draw the block diagram of PPI IC 8255. Explain the function of each block in brief. Explain the function of various modes of operation of 8255. 2+4+4

5. Answer any **TEN** questions from following :—

(A) State the function of PC in 8085.

(B) Write the function of IO/ $\overline{M}$ signal.

(C) What is T-state ?

(D) Enlist various groups of instruction set in 8085 microprocessor.

(E) What will be the content of accumulator after the execution of instruction XRA, A ?

(F) Mention the difference between SUB A and CMP A instruction.

(G) Why stack memory is reserved at the higher and of the memory map ?

(H) Give two examples of conditional Jump instruction.

(I) Give any two conditional RET instruction.

(J) Give control word format in I/O mode of 8255.

(K) What happens when EI instruction is executed ?

(L) What is BSR mode of 8255 ? 1×10