Fifth Semester B. Sc. Examination

ELECTRONICS

Paper – II

Fundamentals of Microprocessor

Time : Three Hours] [Max. Marks : 50

N. B. : (1) All questions are compulsory and carry equal marks.
(2) Draw neat and well labelled diagrams wherever necessary.

EITHER

1. (A) Draw the block diagram of Intel 8085 μp and Explain each block in brief. 10

OR

(B) Explain address, data and control bus of 8085 microprocessor. Explain the need for address and data bus multiplexing. Explain how it is achieved. 6+2+2

EITHER

2. (A) What are different modes of addressing in 8085 ? Explain.
Write ALP to find 2'S complement of a number stored in register B. Store the result in register D. 5 + 5

OR

(B) Write an assembly language program to perform following tasks and state status of 'flags'

(1) Add immediate data $(25)_H$ with $(38)_H$ and store the result in memory location $(6666)_H$. What are the contents of $(6666)_H$ after execution of the program ?

(2) Logically XOR data $(A5)_H$ with $(5A)_H$. Store the result in memory location $(6670)_H$. What are the contents of $(6670)_H$ after execution of the program ? 5 + 5

EITHER

3. (A) Explain stack and stack pointer.
Explain the action of PUSH and POP instruction with suitable example. 3 + 7

OR

(B) What is subroutine ?
Describe conditional, unconditional CALL and RET instruction. 1 + 9

EITHER

4. (A) Draw the block diagram of PPI 8255 and Explain the function of each block. List various modes of operations of 8255. 8 + 2

OR

(B) Explain the need for interfacing in microprocessor based system.
State and Explain DMA data transfer schemes. 4 + 6

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

(A) Define machine cycle.

(B) If register A = 3 AH, B = 78 H. What will be the contents of A after SUB B.

(C) What is multiplexing ?

(D) If register A = 47 H. What is the content of register ? A after XRA A.

(E) What is the address mode of following instructions ?

(i) Mov A , B

(ii) LXI D, 2400 H

(F) Write programming steps to complement the content of register B.

(G) If SP = 3500 H. What is the content of SP after PUSH B instruction ?

(H) Write any two branch control instruction.

(I) Write any two, three byte instruction.

(J) What is long form of DMA ?

(K) What is BSR mode ?

(L) What is meant by interrupt ? 1 x 10