K23P 1427

Reg. No. : .....

Name : .....

III Semester M.Sc. Degree (C.B.S.S. – Reg./Supple./Imp.) Examination, October 2023
(2020 Admission Onwards)
PHYSICS
PHY 3E03 : Microprocessors and Applications

Time : 3 Hours Max. Marks : 60

SECTION – A

Answer **both** questions (either **a** or **b**) :

1. a) i) Explain different addressing modes of Intel 8085.
   ii) List and explain different data transfer group of 8085 instruction set.

   OR

   b) What is Programmable Peripheral Interface ? Explain the architecture, control signals, and operating modes of Intel 8255A. List the bits of the control word for programming the ports of Intel 8255A.

2. a) With the help of a block diagram, explain the microprocessor-based system for temperature measurement.

   OR

   b) Explain different data transfer schemes of microprocessor-based systems.

(2×12=24)

SECTION – B

Answer **any four**. **1** mark for Part (**a**), **3** marks for Part (**b**), **5** marks for Part (**c**) :

3. a) Explain the operation performed by PUSH rp.
   b) Describe the CALL RETURN structure of subroutine.
   c) Write an assembly language program for the subtraction of two 8-bit numbers. The first number 49H is in the memory location 2501H and the second number is in the memory location 2502H. The result is to be stored in the memory location 2503H.

P.T.O.

4. a) What is the purpose of memory mapping in microprocessor systems ?
   b) Describe the concept of memory interfacing.
   c) Discuss the differences between memory-mapped I/O and I/O-mapped I/O.
5. a) What is USART ?
   b) What are the functions of modem ? List the standard modem control signals of Intel 8251.
   c) Explain the steps involved in data transfer scheme from CPU to I/O devices and vice versa.
6. a) What is the importance of A/D Converters ?
   b) Draw the circuit diagram and explain the function of Zero-cross detector.
   c) Write notes on ADC Intel 0800.
7. a) What are micro controllers ?
   b) Write notes on registers of 8051 micro controllers.
   c) Draw the block diagram of Intel 8051.
8. a) What is delay subroutine ?
   b) Write a simple delay subroutine involving a single 8 bit register of Intel 8085.
   c) Write an Intel 8085 program to generate a square wave either using I/O port or using SOD line. **(4×9=36)**
