K21P 1013

Reg. No. : .....

Name : .....

III Semester M.Sc. Degree (CBSS–Reg./Suppl./Imp.)
Examination, October 2021
(2018 Admission Onwards)
PHYSICS
PHY3E03 : Microprocessors and Applications

Time : 3 Hours Max. Marks : 60

SECTION – A

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

1. a) What are the various types of data formats for Intel 8085 instructions ? Give examples for each type of data format.

   OR

   b) What is a programmable communication interface ? Explain the architecture of Intel 8251.

2. a) Discuss a microprocessor-based scheme to measure and display frequency.

   OR

   b) i) Write a short note on dynamic RAM controllers (Intel 8203, Intel 8207, Intel 8208).

   ii) Discuss the main features of Intel 8051 family of microcontrollers. **(2×12=24)**

SECTION – B

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

3. a) Explain register addressing with an example.

   b) List various machine cycles of 8085.

   c) Write an assembly language program to add two 8-bit numbers, the sum may be of 16 bits.

P.T.O.

4. a) What is the need for Port ?

   b) Briefly explain software interrupts of 8085.

   c) Distinguish between memory mapped I/O and I/O mapped I/O scheme.

5. a) What is polling ?

   b) Write a short note on cycle stealing Technique.

   c) Explain the operating modes of Intel 8255.

6. a) What is a programmable DMA controller ?

   b) Sketch the pin label diagram of Intel 8259.

   c) Sketch and explain the microprocessor-based water-level indicator and automatic pumping.

7. a) What is the function of a zero cross detector ?

   b) Write a short note on Dot Matrix Printer Controller.

   c) Discuss the main features of ADC 0800.

8. a) What is a D/A converter ?

   b) Sketch microprocessor-based scheme for temperature measurement.

   c) What is a stepper motor ? Show Interface Connections for a microprocessor-based scheme for controlling a stepper motor. **(4×9=36)**
