



**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**.

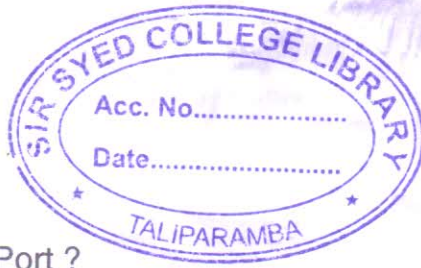
3. a) Explain register addressing with an example.

- 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.

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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)