

**18P407**

(Pages: 2)

Name.....

Reg. No.....

**FOURTH SEMESTER M.Sc. DEGREE EXAMINATION, APRIL 2020**

(CUCSS - PG)

(Regular/Improvement/Supplementary)

**CC17P PHY4 E20 – MICROPROCESSORS AND APPLICATIONS**

(Physics)

(2017 Admission onwards)

Time: Three hours

Maximum: 36 Weightage

**Section A**

Answer *all* questions. Each question carries 1 weightage.

1. Discuss the register organization of Intel 8085.
2. What are assembler directives? What are the different directives in a typical assembler?
3. What is a stack memory? How stack is used in 8085?
4. Explain the terms Instruction cycle, Machine cycle and T-states.
5. What is meant by interrupt? What are the different interrupts of 8085?
6. Discuss the functions of SIM and RIM instructions of 8085.
7. Bring out the basic idea of generating control signals for memory and I/O devices in 8085.
8. Briefly explain the features of programmable keyboard interface-8279.
9. What is meant by Analog to Digital conversion? Discuss with an example.
10. What is a Sample and Hold circuit? What is its requirement in a microprocessor based data acquisition system?
11. What is the difference between a microprocessor and microcontroller?
12. Draw the block diagram showing internal structure of microcontroller Intel 8051.

**(12 x 1 = 12 Weightage)**

**Section B**

Answer any *two* questions. Each question carries 6 weightage.

13. Discuss with the help of a block diagram the internal structure of Intel 8085. Also explain the different pins of Intel 8085.
14. Discuss in details the different types of data transfer schemes employed in microprocessor systems.
15. Discuss the different modes of operation of Intel-8253, the programmable interval timer.

16. Explain the operation of ADC0800. Discuss with necessary diagrams and program, how the voltage and current in a circuit can be simultaneously measured and stored using 8085 with the help of Analog multiplexer, Sample and Hold circuit and ADC0800.

**(2 x 6 = 12 Weightage)**

### **Section C**

Answer any *four* questions. Each question carries 3 weightage.

17. Develop an Assembly Language Program for finding the largest byte among a set of bytes stored in memory.
18. Discuss an Assembly Language Program for adding two multi byte numbers stored memory.
19. Draw the timing diagram associated with the instruction MVI M, FFH, which is stored in memory location 2000H.
20. Briefly explain the function of programmable interrupt controller – Intel 8259.
21. Discuss with necessary circuits and program, a method for measuring the frequency of an ac signal.
22. Design a system to realize an ADC using DAC with the help of 8085.

**(4 x 3 = 12 Weightage)**

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