FOURTH SEMESTER M.Sc. DEGREE EXAMINATION, APRIL 2019

(CUCSS - PG)

(Physics)

CC15P PHY4 E20 / CC17P

PHY4 E20 –

MICROPROCESSORS AND APPLICATIONS

(Regular/Improvement/Supplementary)

(2015 Admission onwards)

Time: Three Hours   Maximum: 36 Weightage

Section A

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

1. Discuss the bus organization of Intel 8085 microprocessor.

2. Explain the action of the following instructions:

   (a) MOV C,A   (b) LXI H 3000H   (c) ADD M   (d) STAX D

3. Explain the working of stack in Intel 8085.

4. Explain Instruction cycle, Machine cycle and T-State.

5. What is meant by interrupts? Discuss briefly the various interrupts of 8085.

6. Discuss the concept of address space partitioning in a microprocessor.

7. Briefly discuss the functions of programmable DMA controller, Intel 8257.

8. Give the concept of generating control signals for Memory and I/O devices in 8085.

9. What is a sample and hold circuit? What is its requirement in a data acquisition system?

10. Discuss the construction and working of 7-segment displays.

11. What is a microcontroller? How is it different from a microprocessor?

12. Discuss the register structure of Intel 8051 microcontroller.

(12 x 1 = 12 Weightage)

Section B

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

13. With suitable examples discuss the instruction set of Intel 8085. Bring out the concept of length, group and addressing modes of the instructions.

14. Discuss the different types of data transfer schemes employed in a microprocessor system.

15. Explain the different modes of operations of Programmable Interval Timer, Intel 8253.

16. Explain the working of a successive approximation ADC. Discuss a system with necessary hardware and software for measuring current and voltage in a circuit simultaneously, using a microprocessor.

(2 x 6 = 12 Weightage)

Section C

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

17. Develop an assembly language program for picking the largest integer from an array of integers.

18. Write and explain an assembly language program for finding square of a number using a lookup table.

19. Draw the timing diagram associated with the instruction, LDA 2000H.

20. Explain the different operating modes of Intel 8255 and its programming.

21. Develop an assembly language program segment which will generate a delay of at least 10ms. How much it is differing from the given value. (Assume the microprocessor has a clock of 3MHz).

22. Discuss with necessary hardware and software, a method to determine the period of an ac signal, using Intel 8085.

(4 x 3 = 12 Weightage)

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