

C 80734

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Name.....

Reg. No.....

FOURTH SEMESTER M.Sc. DEGREE EXAMINATION, MARCH 2020

(CUCSS)

Physics

PHY 4E 20—MICROPROCESSORS AND APPLICATIONS

(2012 Admissions)

Time : Three Hours

Maximum : 36 Weightage

Part A

Answer all questions.

Each question carries weightage 1.

1. What is meant by an instruction cycle ? Name the signals send by the CPU for opcode fetch operation.
2. List the functions of general purpose registers of 8085 microprocessor.
3. Briefly discuss the memory representation of integer in microcomputers. Explain negative number representation.
4. What is the pulse of ALE signal ?
5. What are the contents of address bus when the microprocessor is reset ?
6. The memory address of the last location of 1k bytes of memory chip is given as FF00 H. Specify the starting address.
7. Name the different modes of operation of 8255 PPI.
8. What is seven segment display ? Discuss its importance in digital world.
9. Write short note on sample and hold circuit.
10. Differentiate microprocessor and microcontroller.
11. What are flags ?
12. What is assembler directive ?

(12 × 1 = 12 weightage)

Turn over

Part B

Answer any two questions.

Each question carries weightage 6.

13. What are the address space partitioning modes in a processor ? Explain the different addressing modes of 8085 processor with examples.
14. With a neat sketch explain the working of programmable keyboard/display interface.
15. Explain in detail ICWs and OCWs of 8259 PIC.
16. With the help of suitable diagrams and flowchart, explain the working of microprocessor based temperature control system. Also write an assembly language program to maintain the temperature of the system within a desired limit.

(2 × 6 = 12 weightage)

Part C

Answer any four questions.

Each question carries weightage 3.

17. How is de-multiplexing of address and data buses done and control signals generated in 8085 microprocessor ? Explain with the help of a detailed schematic diagram.
18. Draw the flag register format of 8085 microprocessor. Explain the function of flags.
19. Write an assembly language programs to add two 16-bit numbers (EDFC H and 63DF H) without using 'DAD' instruction, and the sum is to be stored in memory locations 1001 H and 1002 H and carry at 1003 H (if any).
20. Write an assembly language program to read data from memory location 1100 H, find the one's complement of data and store it in location 1102 H.
21. Write an assembly language program to convert one byte hex number stored at 2000 H to equivalent BCD number without using DAA instruction. Store the result at 2001 H and 2002 H.
22. Explain the working of ADC 0800.

(4 × 3 = 12 weightage)