

Q. P. Code : 33407

(2½ Hours)

[Total Marks: 75]

- N. B.: (1) **All** questions are **compulsory**.
 (2) Make **suitable assumptions** wherever necessary and **state the assumptions** made.
 (3) Answers to the **same question** must be **written together**.
 (4) Numbers to the **right** indicate **marks**.
 (5) Draw **neat labeled diagrams** wherever **necessary**.
 (6) Use of **Non-programmable** calculators is **allowed**.

1. Attempt any three of the following:

15

- Explain different constituents of microprocessor system. Draw a neat diagram showing microprocessor based system with bus architecture
- Explain the difference between 8085 machine language and 8085 assembly language.
- With neat labeled diagram explain how 8085 system bus is divided into three different sets of communication lines
- Illustrate the memory address range of a memory chip with 256 bytes of memory. Draw a neat diagram to show the memory map and explain how this memory chip is accessed by 8085 microprocessor.
- Explain how lower order data and address bus of 8085 microprocessor are demultiplexed.
- With proper timing diagram explain memory read cycle of 8085 microprocessor.

2. Attempt any three of the following:

15

- Explain how eight DIP switches are interfaced with 8085 microprocessor using a decoder.
- How is testing and troubleshooting of I/O interfacing circuit is done?
- Discuss in brief the programming model of 8085 microprocessor.
- What is meant by hand assembly? How is hand assembling of a program done?
- Explain any one arithmetic and any one logical group one byte instruction from the instruction set of 8085 microprocessor.
- Write an assembly language program to add two 8 bit numbers stored at memory locations D200 H and D300 H. Store the answer at memory location D400 H. (Hex code for the program is not expected)

3. Attempt any three of the following:

15

- What are different available conditional loops in the assembly language programming for 8085?
- Explain following logical instructions –
 i. RAL ii. RLC
- What is time delay? Why is time delay needed in a program? What are different ways of generating a time delay in an assembly language program for 8085 microprocessor.
- Write an assembly language program for 8085 microprocessor to count continuously from FFH to 00H in a system with 0.05µs clock period. Set up a delay of 1 millisecond between two value.
- What is stack? How is stack used both by microprocessor and user?
- Explain following instructions for 8085 microprocessor –
 i. Restart ii. Conditional call and return.

[TURN OVER]

4. Attempt any three of the following:**15**

- a. Write a 8085 assembly language to convert a 8-bit binary number to unpacked BCD.
- b. What is meant by table look up technique? How is it used for BCD to Seven Segment LED code conversion?
- c. Explain the hardware features of a typical software development system.
- d. What are advantages of an assembler?
- e. Discuss various interrupts used by 8085 microprocessor and their priorities.
- f. What is meant by vectored interrupt? Also explain use of SIM instruction.

5. Attempt any three of the following:**15**

- a. What are special Pentium Registers? Discuss the architecture of Special Pentium Registers.
- b. Discuss the memory map of Pentium 2 processor
- c. Explain the CPUID instruction used by Pentium 4.
- d. Explain the architecture of SPARC.
- e. List the components of SPARC processor. Discuss each in brief.
- f. Explain the concept of windowed register of SPARC microprocessor.