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**

a. Explain different constituents of microprocessor system. Draw a neat diagram showing microprocessor based system with bus architecture
b. Explain the difference between 8085 machine language and 8085 assembly language.
c. With neat labled diagram explain how 8085 system bus is divided into three different sets of communication lines
d. 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.
e. Explain how lower order data and address bus of 8085 microprocessor are demultiplexed.
f. With proper timing diagram explain memory read cycle of 8085 microprocessor.

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

a. Explain how eight DIP switches are interfaced with 8085 microprocessor using a decoder.
b. How is testing and troubleshooting of I/O interfacing circuit is done?
c. Discuss in brief the programming model of 8085 microprocessor.
d. What is meant by hand assembly? How is hand assembling of a program done?
e. Explain any one arithmetic and any one logical group one byte instruction from the instruction set of 8085 microprocessor.
f. 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**

a. What are different available conditional loops in the assembly language programming for 8085?
b. Explain following logical instructions –
i. RAL ii. RLC
c. 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.
d. 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.
e. What is stack? How is stack used both by microprocessor and user?
f. Explain following instructions for 8085 microprocessor –
i. Restart ii. Conditional call and return.

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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.
