Lib 28/11 (M)

Roll No.:.....

National Institute of Technology, Delhi

Name of the Examination: B.Tech.

Branch	**: EEE**	**Semester**	**: V**
Title of the Course	**: Microprocessors and Applications**	**Course Code**	**: EC 304**

Time: 3 Hours **Maximum Marks: 50**

Note:

- **Questions are printed on BOTH sides. Answers should be CLEAR, TO THE POINT AND LEGIBLE.**
- **All parts of a single question must be answered together and in the same sequence as given in question paper. ELSE QUESTION SHALL NOT BE EVALUATED.**

SECTION-A

Q.1. What is the format for Operational Command Word OCW_2 used in 8259 Programmable Interrupt Controller. (2)

Q.2. (a) What do you understand by Power-on RESET in 8051 and what is the status of various registers after RESET action is performed? (2)

Q.3.
```
MOV SI, 0300H
MOV DI, 0400H
MOV CX, 0005H
REP
MOVSB
```
What does the above line of codes do in an 8086 microprocessor? (2)

Q.4. Why is the advantages and disadvantages of programming in C in a 8051 microcontroller. (2)

Q.5. (a) The memory of a 4K byte memory chip begins at location 2000H. Specify the address of the last location in the chip when it is interfaced with an 8085 microprocessor. (1)

(b) What is the function of AC flag in 8085 microprocessor? (1)

SECTION-B

Q.6. What is the significance of $XTAL_1$ and $XTAL_2$ pins in 8051 and show through a circuit how should they be connected to the 8051 microcontroller? (4)

Q.7. For a 8255 Programmable Peripheral Interface, draw the timing waveforms for the strobed Output (with handshake) in MODE1 and explain. (4)

Q.8. Write an Assembly Language Program for 8086 microprocessor to add the contents of the memory location 2000H: 0500H to contents of 3000H: 0600H and store the result in 5000H: 0700H. (4)

Q.9. Explain in detail the functions of all the four ports of 8051 microcontroller. (4)

SECTION-C

Q. 10. Discuss the MODE0 of 8254 Programmable Interval Timer and also write a program for 8085/8086 microprocessor which is interfaced with an 8254 so that it could generate a pulse every 50 microseconds. Address for Control word register is 83H. The 8254 is working at 2 MHz. (6)

Q.11. For a 8051 microcontroller

(a) Discuss the Bit Addressable RAM (3)

(b) Write instructions for 8051 microcontroller to use the registers of bank 2, and load the same value A5H in registers R0 to R3. (3)

Q. 12. Discuss the addressing modes of 8051 with examples for each of the addressing modes

OR

Explain the architecture of 8086 microprocessor describing in detail the function of each black. (6)

Q.13. Explain all the interrupts of 8085 microprocessor in detail.

OR

Explain all the interrupts of 8086 microprocessor in detail. (6)