SE Sem IV (ECS) C- Scheme KT Winter 2025

Duration: 3hrs

Marks: 80

Note:
1. Question number one is compulsory
2. Solve any 3 out of remaining five
3. Figures to the right indicates full marks
4. Assume suitable data, if required and state it clearly.

Q.1 Answer any four. [20 M]

a. Draw and explain the PSW registers of 8051 microcontroller.
b. Differentiate between dedicated interrupts and software interrupts in 8086.
c. Explain the different addressing modes of the 8086 microprocessor.
d. How does Mode 0 differ from Mode 1 and Mode 2 in 8255 PPI?
e. Compare microprocessors and microcontrollers.

Q.2 (a) Explain the function of the 8284 clock generator and how it generates system clock and reset signals. [10 M]

(b) Explain the interfacing of a stepper motor with the 8051 microcontroller. [10 M]

Q.3 (a) Write an 8086 assembly program to check whether a string is palindrome or not. [10M]

(b) Explain the read and write cycle timing diagram of 8086 in minimum mode. [10 M]

Q.4 (a) Explain the architecture of the 8051 microcontroller with a neat diagram. [10 M]

(b) Design an 8086 microprocessor-based system using minimum mode with the following specifications:
i) 8086 microprocessor working at 8 MHz.
ii) 32 KB EPROM using 16 KB chip.
iii) 32 KB SRAM using 16 KB chip. [10 M]

Q.5 (a) Explain the functional block diagram of the 8259 PIC and its cascaded mode of operation. [10M]

(b) Describe the memory interfacing techniques in the 8086 microprocessor. [10 M]

Q.6 Write short notes on any three: [20 M]

1. Minimum and Maximum mode timing diagrams in 8086
2. Interrupt service routines in 8086
3. Timer programming in 8051
4. LCD and Keyboard interfacing with 8051

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