B. Tech Examination 2024-25

(Odd Semester)

MICROPROCESSOR AND INTERFACING

Time : Three Hours] *[Maximum Marks : 60*

Note :– Attempt all questions.

SECTION–A

1. Attempt all parts of the following : $8 \times 1 = 8$

(a) What is the difference between SRAM and DRAM?

(b) What is the purpose of addressing modes in microprocessors?

(c) Define cache memory.

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(d) Name the interrupt types in an 8-bit microprocessor.

(e) What are the operating modes of the 8086 microprocessors?

(f) What is the purpose of the execution unit in the 8086 microprocessor?

(g) What is the function of the 8259 PIC controller?

(h) Define RS232C.

SECTION – B

2. Attempt any two parts of the following : $6 \times 2 = 12$

(a) Describe the architecture and function of the 8255 programmable peripheral interface.

(b) Discuss the differences between structured and modular programming techniques in microprocessor programming.

(c) Discuss the instruction classification of an 8-bit microprocessor.

(d) Explain the differences between primary memory and secondary memory with examples.

SECTION – C

Note:- Attempt any two parts from each question. Each part carry equal marks. $8 \times 5 = 40$

3. (a) Discuss the evolution of microprocessors and their types.

(b) Explain the concept of real and virtual memory with example.

(c) Illustrate data transfer schemes and the role of interrupts in microprocessors.

4. (a) Compare the technical features of pentium and pentium pro processors.

(b) Describe the interrupt structure of an 8-bit microprocessor.

(c) Illustrate the function of a machine cycle with a timing diagram.

5. (a) Explain the architecture and registe organization of the 8086 microprocessor.

(b) Describe the addressing modes of the 8086 microprocessor with examples.

(c) Write an assembly language program to add two 8 bit numbers using the 8085 microprocessor.

6. (a) Explain the working of the 8237 DMA controller in detail.

(b) Discuss the role of the 8253/8254 timer in microprocessor applications.

(c) Illustrate the working of the 8251 USART and its communication with RS232C.

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