

(3 Hours)

[Total Marks: 80]

29 MAY 2018



N.B.: (1) Question No. 1 is compulsory.

(2) Solve any three questions out of remaining five.

(3) Figures to right indicate full marks.

(4) Assume suitable data where necessary.

1. Solve any four out of five sub questions.

[04 x 05=20]

- Differentiate between minimum and maximum mode of operation of 8086 microprocessor.
- Explain any five arithmetic instructions of 8086 microprocessor with suitable examples.
- Draw and explain basic instruction execution cycle.
- Describe Nano programming.
- Explain the hierarchical organization of computer memory.

2. a) Explain with suitable diagram architecture of 8086 microprocessor.

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b) Explain hardwired approach to the design of a control unit.

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3. a) Represent the number $(-0.125)_{10}$ in single and double precision IEEE 754 binary floating point representation formats.

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b) Write 8086 Assembly Language Program to convert two digit packed BCD number to unpacked BCD number.

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4. a) Identify the addressing modes of following instructions and explain their meaning.

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I. MOV AX, 1000

II. MOV AX, [1000]

III. MOV AX, BX

IV. MOV [BX], AX

V. MOV AX, [SI+200]

b) Draw the flowchart of Booths algorithm and multiply $(-7) \times (3)$ using Booths algorithm.

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5. a) Explain working of DMA and its different configurations.

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b) Explain different cache memory mapping techniques.

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6. Write notes on (any two)

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a) Interleaved and Associative memory.

b) Interrupt driven I/O

c) Pipeline Hazards