



(Following Paper ID and Roll No. to be filled in your Answer Book)

**PAPER ID : 121402**

Roll No.

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## B. Tech.

### (SEM. IV) THEORY EXAMINATION, 2014-15 MICROPROCESSORS

Time : 3 Hours]

[Total Marks : 100

**Note :** Attempt all questions. All questions carry equal marks.

1 Attempt **any four** parts of the following: **5×4=20**

- (a) What is bus? What are different types of buses supported by 8085 microprocessor ? Explain with suitable block diagram.
- (b) Discuss evolution of microprocessor with suitable tree diagram.
- (c) What is addressing mode ? Explain various types of addressing modes supported in 8085 microprocessor.
- (d) What following instructions do in the 8085 microprocessor?
  - (i) LXI H, 3000H      (ii) STA, 5000H
  - (iii) DAD, D      (iv) SHLD, 3004H
  - (v) LHL, 3002H

- (e) Explain architecture of microprocessor with suitable block diagram.
- (f) Write short notes on:
  - (i) Microprocessor
  - (ii) CPU
  - (iii) Minicomputer
  - (iv) Higher level language

2 Attempt **any two** parts of the following: **10×2=20**

- (a) Draw the internal architecture of 8085 microprocessor. Explain each block with suitable diagrams.
- (b) Draw the pin-diagram of 8085 microprocessor and give the name of signals associated with timing and control circuit and explain.
- (c) Explain the role and working of latches and transceivers (data buffer) in 8085 microprocessor system.

3 Attempt **any two** parts of the following: **10×2=20**

- (a) Give the signal description of 8086 used in min. and max. mode, Explain with suitable diagrams and waveforms.
- (b) Draw and explain timing diagram of memory read cycle in the 8086 minimum mode microprocessor.
- (c) Explain the various types of interrupt of 8086 and classify them on the basis of highest and lowest priority.

4 Attempt **any two** parts of the following: **10×2=20**

- (a) Draw the flow chart and write program to shift left 8-bit number by 2 bits.
- (b) Draw flow chart and write program of addition of two 16-bit numbers without carry.
- (c) Explain the following instructions with suitable example. Also indicate the flag condition.
  - (i) AAA (ii) DAA (iii) MUL
  - (iv) RCR (v) MOVSF

5 Attempt **any two** parts of the following: **10×2=20**

- (A) Explain the different modes of operation of 8255 PPI.
  - (B) Draw the architecture of 8253, programmable timer/counter, and explain each block.
  - (c) What is DMA ? Explain 8237 DMA controller with suitable diagram.
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