



Printed Pages : 4

TEE - 404

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

PAPER ID : 2054

Roll No.

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**B. Tech.**

**(SEM. IV) EXAMINATION, 2008-09**

**MICROPROCESSORS**

*Time : 3 Hours]*

*[Total Marks : 100*

- Note :**
- (1) Attempt **all** questions
  - (2) All questions carry equal marks.

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

- (a) List the components of computer and explain each in brief. What is the difference between a micro processor and a CPU?
- (b) Discuss the 16-bit registers of 8085 microprocessor. Also explain the limitations of 8 bit microprocessor.
- (c) Explain the need to demultiplex the bus  $AD_7 - AD_0$  with neat diagram.
- (d) Discuss the features of 8085 interrupts. Also, explain the SIM and RIM formats.





- (e) Draw the timing diagram of transfer of byte from Memory to microprocessor unit. Also explain the role of ALE signal.
- (f) Explain pipelining architecture of 8086 microprocessor. Show bit-wise flag register of 8086 microprocessor and explain each one with examples.

2 Attempt any **four** parts of the following: **5×4**

- (a) Describe with an example the way to generate physical and effective address.
- (b) Classify the Instructions of 8086 microprocessor in different group. Also give an example for each one.
- (c) Discuss the role of stack in 8086 microprocessor. Explain with neat diagram.
- (d) Give the example of Loop and String instructions of 8086 microprocessor and its addressing mode.
- (e) How assembler MACRO differs from procedure?
- (f) Write an assembly language program to find positive and negative numbers along with remarks from given set of 10 numbers.

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

- (a) Draw the diagram of 8284A clock generator. Explain how the clock is generated?
- (b) Draw and discuss the various modes of operation of 8255. What is Handshaking signal ?
- (c) Describe the following in brief:
- (i) Memory map
  - (ii) min. mode signal (pin 24 - 31)
  - (iii) Timing diagram.

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

- (a) Explain the methods for interfacing of I/O devices with 8086 microprocessor.
- (b) Draw the interfacing diagram of 8254 (PIT) with 8086 up and explain its operation.
- (c) Draw and discuss the various modes of operation of 8253 / 8254 interface.

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

- (a) Explain the mode of operation of 8259, programmable interrupt controller for following case:
- (i) cascade mode





- (ii) nested mode
- (iii) buffered mode

- (b) Discuss the mode of operation of DMA controller 8237. Give the mode register format with bit definition.
- (c) Explain the architectural operation of 8259A interface. How priority resolver unit is important?
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