Printed Pages : 4　　　　　　　　　　　　　　　　**TEE – 404**

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

PAPER ID : 2054　　**Roll No.** ☐☐☐☐☐☐☐☐☐☐

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 micro-processor in different group. Also give an example for each one.

(c) Discuss the role of stack in 8086 micro-processor. 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 explian 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?