* V - 3 0 4 0 *

Printed Pages : 3 **EC – 603**

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

PAPER ID : 3040 Roll No. | | | | | | | | | | |

B. Tech.

(SEM. VI) EXAMINATION, 2006-07

MICROPROCESSORS

Time : 3 Hours] *[Total Marks : 100*

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

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

(a) Illustrate the general bus organization of a microprocessor.

(b) Explain the function of Timing and Control unit of a general microprocessor.

(c) How BIU of 8086 generates 20 bit address to access external memory ?

(d) Describe Flag register of 8086.

(e) Specify : (i) Bus cycle (ii) Machine cycle (iii) Instruction cycle.

(f) How registers of microprocessor are different than a RAM byte ?

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

(a) Write a program in assembly language to generate a delay of 50 msec using LOOP instruction of 8086.

(b) Describe string instructions of 8086. How they are useful ?

(c) Distinguish the following :
   (i) JMP and CALL instructions
   (ii) RET and RETI instructions.

(d) Write down the different types of assembler directives of 8086. Explain any two in details.

(e) Specify the location of operands and results when
   (i) Division type instruction is executed
   (ii) Multiplication type instruction is executed.
   Indicate if any flag is affected in the above cases.

(f) What is parameters and passing parameters ?

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

(a) Specify the signals of 8086 used in maximum mode only. Explain the function of each of them.

(b) What is demultiplexing ? Why buffers are used in microcomputer system ? What is the role of ALE pin ?

(c) Enlist the various steps that 8086 takes to following an interrupt. What is interrupt vector table ? Specify the priority of various interrupts of 8086.

4 (a) Discuss the architecture of PIC 8259. What is EOI ? **2×10**

(b) Describe serial communication through RS 232.

(c) Explain with the help of timing diagram the operation of programmable timer 8253 in mode 3 and mode 4.

5 Attempt **four** parts of following : 5×4

(a) How will you interface two 4 K × 8 ROM and two 4 K × 8 RAM chips with 8086. Select suitable maps.

(b) Why refresher circuit is required in Dynamic RAM ?

(c) Enlist differences between Static RAM and Dynamic RAM.

(d) Specify the salient features of Pentium processor.

(e) Draw the architecture of any 8 bit microcontroller using block diagram indicating each component.

(f) Enlist the limitation of microcontrollers.