Code: EE6T3

III B.Tech - II Semester – Regular/Supplementary Examinations March 2018

MICROCONTROLLERS AND APPLICATIONS
(ELECTRICAL & ELECTRONICS ENGINEERING)

Duration: 3 hours   Max. Marks: 70

PART – A

Answer *all* the questions.   All questions carry equal marks

$$11x\ 2 = 22\ M$$

1.
   a) Specify the size of memory that can be addressed by 8086 microprocessor.

   b) What do you mean my masking the interrupt?

   c) How is PUSH BX instruction executed?

   d) What is the main function of READY pin?

   e) If the stack segment register contains 3000H and stack pointer register contains 8434H, what is the physical address of the top of the stack in 8086 microprocessor.

   f) What is the difference between a macro and a procedure?

   g) Mention the size of DPTR in 8051 microcontroller.

   h) What is the operation of given 8051 microcontroller instructions: ORL A,R0 ?

   i) Discuss the use of EA in the special function register IE.

   j) Explain about I/O ports of 8255 in I/O mode of operation.

   k) How do you set TH and TL values for TIMER 0 in mode 0 operation?

PART – B

Answer any *THREE* questions. All questions carry equal marks.

3 x 16 = 48 M

2. a) What is the length of Instruction queue in 8086? Discuss the use of queue. Explain the reason for limiting the length of queue.   8 M

   b) Explain WRITE machine cycle timing diagram of 8086 in maximum mode.   8 M

3. a) Explain the following assembler directives.   8 M
    i) PUBLIC   ii) LABEL   iii) PTR
    iv) GROUP

   b) What is a recursive procedure? Develop an 8086 ALP to calculate the factorial of a number N, where N is a two-digit HEX number.   8 M

4.   Draw the block diagram of 8051 microcontroller and explain each block in detail.   16 M

5. a) Explain different mode of operation of Timer/ Counter in 8051 microcontroller.   8 M

   b) Develop an ALP in 8051 to initialize interrupts with Timer/ Counter 1 having highest priority and External Interrupt 0 having next priority.   8 M

6. a) Draw and discuss the formats and bit definitions of the following SFRs in 8051 microcontroller.
   i) PSW   ii) IP   8 M

   b) Discuss in detail the serial port operation in 8051 microcontroller.   8 M