FACULTY OF ENGINEERING
B.E. 3/4 (E & EE/Inst.) II Semester (Main) Examination, May/June 2012
MICROPROCESSORS AND MICROCONTROLLERS

Time : 3 Hours] [Max. Marks : 75

Note: Answer all questions from Part A.
Answer any five questions from Part B.

PART - A (25 Marks)

1. What are the advantages of Queue ? 2

2. Indicate the addressing modes of the following instruction :
   a) MOV CL, FFh  2
   b) MOV AL, [BX].

3. What are the memory pointers of 8086 microprocessor ? 2

4. If the contents of register BX = FFFFh, explain the results after executing
   NEG BX instruction. 2

5. What is an assembler directive ? Explain ASSUME DIRECTIVE. 3

6. Write BSR word to set the PC₀ of intel 8255. 3

7. What is the difference between assembly language and machine language ? 3

8. Explain the following pin functions.
   a) ALE  2
   b) \overline{EA}

9. Give applications of microcontroller. 3

10. What is the need of timers in real time applications ? 3

(This paper contains 2 pages)
PART – B

11. a) Draw the pin diagram of 8086 and explain maximum mode pins.  
    b) Explain interrupts of 8086 microprocessor.

12. a) Write an assembly language program to determine sum of n-B(1) numbers.  
    b) Explain assembler directives related to segments.

13. Explain internal architecture of intel 8255 with neat sketch.

14. a) Explain on chip memories of 8051 microcontroller.  
    b) Explain counter programming of 8051.

15. a) Explain how array of LEDs are interfaced to 8051 microcontroller and show an interface.  
    b) Develop an ALP in 8051 to display the LEDs ON and OFF alternatively.

16. a) Explain interrupt processing of 8051.  
    b) Explain how external memories are interfaced to 8051 microcontroller.

17. a) Discuss D/A interfacing.  
    b) Explain different modes of timer/counter of intel 8253.