

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 : 2
 - a) MOV CL, FFh
 - 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. 2
 - a) ALE
 - b) \overline{EA}
9. Give applications of microcontroller. 3
10. What is the need of timers in real time applications ? 3



PART – B

(50 Marks)

11. a) Draw the pin diagram of 8086 and explain maximum mode pins. 5
b) Explain interrupts of 8086 microprocessor. 5
12. a) Write an assembly language program to determine sum of n-B(1) numbers. 5
b) Explain assembler directives related to segments. 5
13. Explain internal architecture of intel 8255 with neat sketch. 10
14. a) Explain on chip memories of 8051 microcontroller. 5
b) Explain counter programming of 8051. 5
15. a) Explain how array of LEDs are interfaced to 8051 microcontroller and show an interface. 5
b) Develop an ALP in 8051 to display the LEDs ON and OFF alternatively. 5
16. a) Explain interrupt processing of 8051. 5
b) Explain how external memories are interfaced to 8051 microcontroller. 5
17. a) Discuss D/A interfacing. 5
b) Explain different modes of timer/counter of intel 8253. 5