



Code No. : 5149/M

FACULTY OF ENGINEERING
B.E. 3/4 (ECE) (Main) II Semester Examination, May/June 2012
MICROCONTROLLERS AND APPLICATIONS

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. Define a Microcontroller. 2
2. Explain the significance of following pins of 8051 : 3
 - a) EA
 - b) ACE
 - c) $\overline{\text{PSEN}}$
3. What are the major difference between PIC 16C6X and PIC 16C7X microcontrollers ? 2
4. Give the program memory organization of PIC 16C6X microcontroller. 2
5. List out the available I/O ports of PIC 16C6X and write their functions. 3
6. Describe each bit in OPTION register of PIC 16F877 microcontroller. 3
7. Write about the operation of timer O in PIC 16F877 microcontroller. 2
8. Show the design of 8255 connection to 8051 where port A has address 8000H. 3
9. List out bit addressable features of 8051. 3
10. Mention different automation and control applications of microcontroller. 2

PART – B(50Marks)

11. a) Explain the architecture of 8051. 6
b) List out the addressing modes of 8051. 4
12. a) Write on ACP to control the rotation of stepper motor by 8051 microcontroller. 5
b) Show the 8051 connection to external data RAM of 16K × 8 size. 5



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13. a) What is the advantage of serial communication over parallel communication ? 3
b) Write a program to transfer a letter 'N' serially at 9600 baud continuously. 7
14. Describe ADC module in PIC 16F877 microcontroller. 10
15. a) Explain the operational modes of LCD. 5
b) Interface on LCD to 8051. 5
16. Write short note on : 10
a) LVDT
b) Angular speed measurement (RPM) meter.
17. Write **any two** of the following : 10
a) MSSP module of PIC 16F877.
b) Real time clock.
c) Interrupt logic diagram of PIC 16C6X.
d) Interrupts of 8051.