



Sem - VI Microcontroller & Embedded System (3 Hours)

Total Marks : 100

- N. B. : (1) Question No. 1 is compulsory.
(2) Attempt any four questions from remaining six questions.
(3) Draw neat labelled diagrams wherever necessary.
(4) Assumption made should be clearly stated.

(B10M)
50/11/11

1. A) What is the execution time for a single instruction of 8051 with 6MHz clock. [20]
B) Explain various addressing modes of 8051.
C) What are the different hardware components of embedded system.
D) Explain the PSW register of 8051.

2. Interface 4X4 matrix keyboard with 8051. Explain how a key press is detected. [20]

3. A) Explain different Timer/Counter modes of 8051. [10]
B) What are the power saving modes of 8051. [10]

- 4 A) Explain the various addressing modes of 8051 with suitable examples [10]
B) Write a program to generate a square wave with 50% duty cycle on P1.5. [10]
Use Timer 0 to generate the delay.

- 5 A) Explain the Embedded software development cycle. [10]
B) Explain the processor and memory selection for embedded systems. [10]

6. A) Explain the concept of device drivers and explain device servicing using ISR. [10]
B) Explain the advantages and disadvantages of parallel and serial communication. [10]

7. Write short notes on any 3:- [10]
 - a) PCI and PCI-X bus
 - b) Stack of 8051
 - c) Deadline and Interrupt Latency
 - d) Serial communication using I2C and CAN bus