

Roll No.

23335

**M. E./M. Tech. 1st Semester (Emb. Sys &
VLSIDGN) Examination – June, 2013**

EMBEDDED SYSTEM DESIGN

Paper : MT-VLES-507

Time : Three hours] [Maximum Marks : 100

Before answering the question, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt any five questions. All questions carry equal marks.

1. (a) With the help of a General Block Diagram explain the working of an Embedded System. 10
- (b) Write short notes on different hardware development tools for designing an embedded system given below : 10
 - (i) In-circuit emulators,
 - (ii) Device Programmers,
 - (iii) Demo boards,
 - (iv) In-circuit debugger (ICD2)

2. (a) Find the Differences between microprocessor and microcontroller. 8
- (b) What are the different interrupts of 8051 microcontroller ? Discuss enabling and disabling an interrupt. 12
3. (a) Enumerate and explain various modes of operation for 8051 timers. 10
- (b) Draw and explain the circuit showing I/O port structure of 8051. Explain quasi bidirectional and true bidirectional port. 10
4. Explain the following instructions of 8051. $5 \times 4 = 20$
- (a) SETB
- (b) DJNZ
- (c) CPL
- (d) LCALL
- (e) ACALL
5. (a) Draw the interfacing arrangement for 7- segment LED display using 8051 microcontroller. 10
- (b) How is the memory organized in 8051 ? Explain for EA = 1 & EA = 0. 10

6. (a) Explain the general architecture of PIC microcontroller. What are the significant difference between PIC and 8051 microcontroller? 15
- (b) Explain the concept of pipelining. 5
7. (a) What is difference between Harvard and Princeton architecture microcontrollers? 10
- (b) Explain the general architecture of 8051 microcontroller. 10
8. (a) What are the difference between RISC and CISC microcontroller? 10
- (b) Write a short note on simulator and integrated development environment. 10