

Roll No. ....

**23342**

**M. E./M. Tech. 2nd Semester (Emb. Sys  
& VLSI Dgn) Examination – June, 2013**

**EMBEDDED SYSTEM DESIGN-I**

**Paper : MT-VLES-504**

**Time : Three hours ] [ Maximum Marks : 100**

*Before answering the questions, 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.

1. (a) Explain the term clocking in respect of Pic micro-controller ? 10  
(b) Explain Instruction pipelining in Pic micro-controller ? 10
2. (a) Discuss Program memory map and how program counter access program memory in Pic micro-controller. 10  
(b) Draw the architecture of Pic microcontroller also explain the reg. file structure. 10

3. (a) Explain different types of interrupts and their significance ? 10
- (b) Explain different types of timers used in a Pic microcontroller ? 10
4. (a) Explain compare mode and capture mode in Pic microcontroller. 10
- (b) Explain the process of series peripheral interface in detail ? 10
5. (a) Explain the architecture of ARM processor. 10
- (b) Explain the various types of reg. used in ARM processor. 10
6. (a) Explain the process of pipelining in ARM processor. 10
- (b) How memory is organised and managed in ARM processor ? 10
7. (a) Write an ALP in Pic microcontroller to decrement 16-bit counter. 10
- (b) Write an ALP in Pic microcontroller to toggle the LED's every half second, use 4MHz crystal for 1 microsecond internal clock-period. 10
8. (a) Explain the Hardware interfacing at analog i/p o/p with Pic microcontroller. 10
- (b) Explain the Hardware interfacing of LED of LCD with Pic microcontroller ? 10