BB762

M.Tech. EXAMINATION, May 2019

(Second Semester)

(B. Scheme) (Re-appear)

ECE(VLSI)

MTVLSI504

ESD USING AVR MICROCONTROLLER

Time : 3 *Hours*]   [*Maximum Marks :* 75

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

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. Each question carries equal marks.

Unit I

1. Briefly explain embedded and external memory microcontroller. Also discuss the operation of Harvard processor architecture. Give its merits and limitations. **15**

2. (a) Differentiate between RISC and CISC. **6**

   (b) Enlist salient features of a microcontroller. Explain the role and significance of Interrupts and Timers. **9**

Unit II

3. Describe the following using examples.

   (a) Debugging

   (b) Interpreters. **15**

4. Using suitable illustrations, discuss the role and signicance of development tools/ environments is embedded system design. **15**

Unit III

5. Give significant feature of AVR microcontoller. Also, draw architecture of AVR microcontroller and explain its operation in detail. **15**

6. Briefly describe the following w.r.t. AVR microcontroller :

   (a) UART

   (b) Power-down modes. **15**

Unit IV

7. What are 12C and SPI Protocols ? Explain interfacing of AVR microcontroller with other devices using parallel communication. **15**

8. Write short notes on the following :

   (a) ADC and its significance in embedded system design

   (b) DC motor controller using PWM. **15**