



CBCS SCHEME

18ELD/EIE/ECS/ESP/EVE13

First Semester M.Tech. Degree Examination, Aug./Sept.2020
Advanced Embedded System

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Differentiate RISC and CISC processors. (05 Marks)
- b. Explain the working of SPI. (10 Marks)
- c. Differentiate Microprocessor and Microcontroller. (05 Marks)

OR

- 2 a. Draw and explain the product life cycle curve. (05 Marks)
- b. Explain the working of ZigBee Network. (10 Marks)
- c. Write about the operational attributes of Embedded system. (05 Marks)

Module-2

- 3 a. Explain the Conventional and Unconventional design approaches for firmware design. (10 Marks)
- b. Explain the target Hardware Debugging. (10 Marks)

OR

- 4 a. Write about the issues of Hardware and Software co-design. (10 Marks)
- b. Describe the Firmware development languages, with examples. (10 Marks)

Module-3

- 5 a. Briefly explain the advanced features of ARM Cortex family and its applications. (10 Marks)
- b. Draw the block diagram of ARM Cortex architecture and explain its details. (10 Marks)

OR

- 6 a. Write the general purpose registers and Special registers of ARM Cortex. (08 Marks)
- b. Explain the Nested Vectored Interrupt Controller features in ARM Cortex. (12 Marks)

Module-4

- 7 a. Explain the branching instructions of ARM Cortex – M3 with examples. (08 Marks)
- b. Write about the arithmetic instruction and logical instructions in detail. (12 Marks)

OR

- 8 a. Explain the pipelining concepts in ARM Cortex. (10 Marks)
- b. Draw the diagram of generation of Internal Reset Signals in Cortex-M3 and explain. (10 Marks)

Module-5

- 9 a. Write about the exceptions and exception handling in ARM Cortex. (12 Marks)
- b. Explain the need of Supervisory Cell (SVC) in ARM Cortex – M3. (08 Marks)

OR

- 10 a. Write about SYSTICK TIMER, its related registers and programming sequence to setup SYSTICK TIMER. (12 Marks)
- b. Write the assembly language and 'C' language program for ARM Cortex – M3 to add the numbers from 1 to 10. (08 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.