ONE TIME EXIT SCHEME

USN | | | | | | | | | | |

10EC74

Seventh Semester B.E. Degree Examination, April 2018
Embedded System Design

Time: 3 hrs. Max. Marks:100

Note: ***Answer any FIVE full questions, selecting atleast TWO questions from each part.***

PART – A

1 a. Write a note on embedded design and development process with neat flow chart and list down the steps involved. **(10 Marks)**

b. Explain how information, numbers, addresses and instructions are understood and interpreted in an embedded system design process. **(10 Marks)**

2 a. Write a note on instruction set view of embedded system design with respect to types of instructions and addressing modes. **(10 Marks)**

b. Write a note on RTN model for a microprocessor data path and memory interface with a neat block diagram and explain steps in instruction cycle. **(10 Marks)**

3 a. Explain DRAM memory system with neat block diagram. **(10 Marks)**

b. Explain direct mapped implementation scheme for cache memory for a main memory with 128 M words, cache with 64 K words. Assume suitable page size, word size and block size. Show the address interpretation with different fields indicated. **(10 Marks)**

4 a. Compare 4 common life cycle models used in embedded system design with respect to advantages and disadvantages. **(06 Marks)**

b. What is the difference between system specifications and system requirements with respect to characteristics? **(06 Marks)**

c. Explain various steps of prototype implementation. **(08 Marks)**

PART – B

5 a. Explain sharing the CPU in multitasking with respect to scheduling strategy and context. **(10 Marks)**

b. Write a note on embedded operating system with respect to functions, services. **(10 Marks)**

6 a. Explain the use of task or process control block with respect to RTOS. **(08 Marks)**

b. Explain how stack is associated with task or thread in embedded system. **(08 Marks)**

c. Write data flow diagram for a scheduler to handle three jobs bring data, perform computation, display result. **(04 Marks)**

7 a. Write a note on performance and efficiency measures in embedded system design. **(10 Marks)**

b. Explain methodology used in embedded system design. **(10 Marks)**

8 a. What are the various steps used in analyzing code in embedded system design? **(10 Marks)**

b. What is importance of caches and performance in embedded system design? **(10 Marks)**

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