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Question Paper Code : 60396

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2016.

Sixth/Seventh Semester

Electronics and Instrumentation Engineering

CS 2364/EI 64/10133 EE 703 — EMBEDDED SYSTEM

(Common to Instrumentation and Control Engineering and Electrical and
Electronics Engineering)

(Regulations 2008/2010)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Mention the major challenges in embedded system design.
2. Which type of memory is more suitable for embedded systems? Justify your answer.
3. What is the use of a MACRO function?
4. Mention the flags available for queue.
5. What are the advantages of USB bus?
6. What are preprocessor macros?
7. List the functions of Kernel.
8. When is an RTOS not necessary in an embedded system?
9. Mention any four special function registers in PIC microcontroller.
10. Justify that PIC microcontroller is suitable for embedded system design.

PART B — (5 × 16 = 80 marks)

11. (a) Explain in detail about the different 'Embedded Processors' in a system.

Or

- (b) (i) Explain the different types of 'Single purpose processors'. (8)
- (ii) Discuss the different modules of a modern embedded system. (8)

12. (a) Discuss in detail the function of major structural units in embedded system. (16)

Or

- (b) (i) Explain the function of device drivers. (6)
(ii) Explain how data is transferred using VSB bus and PCI bus. (10)
13. (a) Explain in detail about the Interrupt Servicing Mechanism in embedded systems.

Or

- (b) Explain in detail about the use of semaphores for the critical sections of a task.
14. (a) Explain how interrupt routines are handled in embedded system.

Or

- (b) Explain the state transition diagram of RTOS.
15. (a) Explain in detail the architecture of PIC microcontroller. (16)

Or

- (b) (i) Explain the block diagram of PIC microcontroller based embedded system. (8)
(ii) Write about MBasic compiler and its use in embedded system development. (8)
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