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Question Paper Code : 21396

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2015.

Sixth Semester

Electronics and Instrumentation Engineering

CS 2364/EI 64/10133 EE 703/10144 CSE 26 — EMBEDDED SYSTEM

(Common to Instrumentation and Control Engineering)

(Regulations 2008/2010)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the functional requirements of an Embedded System?

2. Mention the IO standard interface.

3. What is the use of a MACRO function?

4. Mention the flags available for queue.

5. Give the limitations of polling technique.

6. What are the three ways of communication for a device?

7. Define RTOS.

8. Define Semaphore.

9. Name some application for the VxWorks RTOS.

10. Define Deadlock.

PART B — (5 × 16 = 80 marks)

11. (a) Explain the various forms of memory and the functions assigned to them.

Or

(b) Explain the components of exemplary embedded systems.

12. (a) (i) Explain the signal using a transfer of byte when using the 12C bus and also the format of bits at the 12C bus with diagram.

(ii) Explain the internal serial communication devices.

Or

(b) Explain the serial communication using 12C, CAN, USB in detail.

13. (a) Explain the function pointers, function queues and ISR queues.

Or

(b) (i) Explain the optimization of memory codes. (8)

(ii) Explain the Embedded programming in C++. (8)

14. (a) Explain how interrupt routines are handled in embedded system.

Or

(b) Explain the state transition diagram of RTOS.

15. (a) Write in detail about MUCOS and it's features with a suitable example.

Or

(b) How does an RTOS semaphore protect data? Explain by giving example.
