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Question Paper Code : 91569

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2014.

Sixth Semester

Computer Science and Engineering

IT 2354/IT 64/10144 IT 605/10144 CSE 26 – EMBEDDED SYSTEMS

(Common to Information Technology)

(Regulation 2008/2010)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Mention any two applications of Embedded systems.
2. Differentiate between microcontroller and microprocessor.
3. What is a vectored interrupt?
4. What is meant by memory mapped I/O technique?
5. Distinguish Inter task Communication and synchronization.
6. What do you mean by semaphore?
7. What is the importance of pipelining?
8. Why the infinite loop is preferred in an embedded code?
9. Distinguish between functionality of compilation and emulation.
10. What are the design issues in embedded systems?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain the architecture of 8051. (10)

(ii) Explain the building process for an embedded system design. (6)

Or

(b) How does ARM architecture differ from traditional architecture? Explain in detail. (16)

12. (a) Explain the mechanism involved in interrupt handling. (16)

Or

(b) Explain the techniques of memory and I/O interfacing.

13. (a) Explain task management and how does it influence in a real time behavior of an OS. (16)

Or

(b) Discuss the function, pipes, queues and semaphore used for IPC in the embedded system. (16)

14. (a) How is a time driven-multi state architecture described and give a suitable example? (16)

Or

(b) (i) Discuss the linking /locating program in an embedded hardware (8)

(ii) Discuss the debugging and emulation of an embedded H/w and S/w (8)

15. (a) Explain how embedded software is tested for its performance cost analysis. (16)

Or

(b) Discuss the design and implementation of a small intruder alarm system suitable for detecting attempted thefts in a home or business environment. (16)