Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 21184

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2014.

Seventh Semester

Electronics and Communication Engineering

EC 1316 – EMBEDDED SYSTEMS

(Common to Computer Science and Engineering and Fifth Semester EC 1306 A – Information Technology)

(Regulation 2008)

Time : Three hours | Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the different types of Embedded Systems?
2. What is the purpose of embedding software into the system?
3. Mention the name of any two internal serial communication devices.
4. List the significant features of CPCI bus.
5. State the function of queue pointers.
6. What is a Cross compiler?
7. What are the operating system services related to Device Management?
8. How important are the interrupt in RTOS?
9. How will the process deadlines affect the efficiency of scheduling?
10. What is IPCS?

PART B — (5 × 16 = 80 marks)

11. (a) Discuss about the major hardware and software components used in Embedded systems. (16)

Or

(b) Explain the use of VLSI Design and SOC concepts for the embedded system design. (16)

12. (a) (i) Explain the asynchronous communications in serial devices. (8)

(ii) Discuss about the sophisticated interfacing features in I/O devices/ports. (8)

Or

(b) Explain the function of I^2C, CAN and PCI bases. (16)

13. (a) (i) With examples, explain the use of macros and functions in embedded programming. (8)

(ii) Explain how multiple function calls are handled by C programming. (8)

Or

(b) (i) Explain the use of function queues and ISRs in embedded programming. (10)

(ii) Describe the embedded programming in C++. (6)

14. (a) (i) Explain the file system organization and implementation in RTOS. (8)

(ii) Explain the principle of preemptive scheduling and its critical section service. (8)

Or

(b) (i) Explain the priority inversion problem and its solution. (8)

(ii) Describe the semaphore flag based interprocess communication. (8)

15. (a) Explain the following functions of VX words RTOS :

(i) Time delay functions (4)

(ii) Memory allocation (6)

(iii) Queue related functions. (6)

Or

(b) Explain in detail the modules of programming with RTOS. (16)
