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Question Paper Code : 11214

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2016

Fifth/Seventh Semester

Electronics and Communication Engineering

EC 1306 A/EC 1316 – EMBEDDED SYSTEMS

(Common to Computer Science and Engineering and Information Technology)

(Regulation 2008)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions.

PART – A (10 × 2 = 20 Marks)

1. What is a charge pump ?
2. What is GPIB ?
3. What are the components present in devices network ?
4. Write the functions of timer section in an embedded system.
5. State the use of NULL pointer in C programs.
6. What are the special features of object oriented programming ?
7. What are the operating system services related to Device Management ?
8. How important are the interrupt in RTOS ?
9. Mention the functions of RTOS in memory allocation.
10. List the major steps involved in programming with RTOS.

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) Explain in detail the function of the internal serial communication devices UART and HDLC. (16)

OR

- (b) (i) Explain the function and applications of CAN bus. (8)
(ii) Explain in detail the features and function of PCI and PCI-X buses. (8)

13. (a) (i) With example explain the use of pointers for array manipulation. (9)
(ii) Discuss the concepts of embedded programming in C++. (7)

OR

- (b) (i) What is function queue ? With example explain its use in embedded programming. (8)
(ii) Discuss the salient features of C compilers. (8)

14. (a) Explain in detail about the preemptive scheduling models used in embedded systems and how critical section is handled in the preemptive scheduler.

OR

- (b) Discuss how message queues, mail boxes and pipes are used in inter process communication in embedded programming.

15. (a) Describe the design details and features of Micro C Real Time Operating System. (16)

OR

- (b) For a car cruise control, design an RTOS and analyse its performance for better driver assistance. (16)