Question Paper Code : X 67569

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2020

Seventh Semester

Electronics and Communication Engineering

EC 1316 – EMBEDDED SYSTEMS

(Regulations 2008)

Time : Three Hours   Maximum : 100 Marks

Answer ALL questions

PART – A   (10×2=20 Marks)

1. Give the significance of embedded system.

2. Name any four processors used in embedded system design.

3. What are the components present in devices network ?

4. Write the functions of timer section in an embedded system.

5. State the function of queue pointers.

6. What is a cross compiler ?

7. What does shared data problem mean ? How to solve this ?

8. Differentiate priority inversion and deadlock situation.

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) i) With an example, explain the classification of embedded systems.   **(8)**

    ii) Discuss the design possibilities of embedded systems on a chip.   **(8)**

(OR)

  b) i) Describe the important features of exemplary embedded systems.   **(10)**

    ii) Discuss the concepts and types of software embedding into the system.   **(6)**

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) i) Discus the services and functions of RTOS. **(8)**

ii) Explain the techniques used for static task scheduling in RTOS. **(8)**

(OR)

b) i) With an example explain Co-operative round robin scheduling. **(10)**

ii) Write notes on IPC using signals. **(6)**

15. a) i) Draw state transition diagram for tasks. And discuss various functions associated with task control block. **(10)**

ii) List out various functions related to memory management and explain each in detail with respect to μC/OS – II. **(6)**

(OR)

b) i) Discuss about message mailbox and activities involved with it in detail with diagrams. **(8)**

ii) Discuss about message queue and activities involved with it in detail with diagrams. **(8)**

———————