19.12.2022 AN

Reg. No.											

Question Paper Code	11485

B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV/DEC 2022
Sixth Semester
Electrical and Electronics Engineering
(Common to Seventh Semester - Electronics and Instrumentation Engineering)
EE8691 - EMBEDDED SYSTEMS
(Regulations 2017)

Duration: 3 Hours   Max. Marks: 100

PART - A (10 × 2 = 20 Marks)
Answer ALL Questions

Marks, K-Level, CO

1. Give some examples for small scale embedded systems. — *2,K1,CO1*
2. Define device driver. — *2,K1,CO1*
3. What is a CAN bus? Where is it used? — *2,K2,CO2*
4. What is meant by UART? — *2,K1,CO2*
5. Illustrate state machine model. — *2,K1,CO3*
6. What are queue and stack? — *2,K1,CO3*
7. Define Semaphore. — *2,K1,CO4*
8. List the functions of a kernel. — *2,K1,CO4*
9. Identify the importance of temperature and level sensor in washing machine. — *2,K1,CO5*
10. Comment on charge pump circuit in smart card. — *2,K2,CO5*

PART - B (5 × 13 = 65 Marks)
Answer ALL Questions

11. a) Explain the hardware units of embedded system.
    (i)Memory — *3,K2,CO1*
    (ii)Watch dog timer — *5,K2,CO1*
    (iii)Input and output port — *5,K2,CO1*

    OR

    b) Discuss in detail design process in embedded system. — *13,K2,CO1*

12. a) Describe one type of serial communication bus with its communication protocol. — *13,K2,CO2*

    OR

    b) Describe about RS485 protocol and differentiate it with RS232. — *13,K2,CO2*

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create   **11485**

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13. a) Illustrate about the linear or waterfall model in embedded system.   *13,K2,CO3*

                                            OR

      b) Discuss the sequential model program with example.   *13,K2,CO3*

14. a) Explain Task communication, shared memory and message passing.   *13,K2,CO4*

                                            OR

      b) Discuss Inter Process Communication and context switching.   *13,K2,CO4*

15. a) Explain about the concept of embedded system in ATM machine.   *13,K2,CO5*

                                            OR

      b) With suitable diagram, discuss the concept of smart card system application in embedded system.   *13,K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) With neat diagram, explain the working of direct memory access architecture and timing diagram.   *15,K2,CO1*

                                            OR

      b) Elaborate Semaphores, Mailbox, Pipes and shared memory in RTOS.   *15,K2,CO4*