[4659] - 211

B. E. I. T.

INFORMATION TECHNOLOGY

Embedded System (Elective - II(a))

(2008 Pattern) (Semester - I)

Time : 3 Hours]   *[Max. Marks : 100*

Instructions to the candidates:

    1)   *Answers to the two sections should be written in separate books.*

    2)   *Assume suitable data wherever necessary.*

    3)   *Neat diagrams must be drawn wherever necessary.*

SECTION - I

Q1) a)   What are the desirable typical characteristics of an Embedded processor/controller. **[10]**

    b)   What are the challenges of embedded systems? **[8]**

OR

Q2) a)   Explain multiprocessor system in detail. **[10]**

    b)   What is an Embedded System? What are the components of embedded system? **[8]**

Q3) a)   What is Timer? How can it be used in Embedded System? **[8]**

    b)   Explain Serial Transmission Using UARTs **[8]**

OR

Q4) a)   What is Watchdog timer? Explain its use in embedded system. **[8]**

    b)   Explain the different types of memories used in embedded system? **[8]**

Q5) a)   Write the notes on LCD and LED displays used in Embedded systems. **[10]**

    b)   List and brief the different technologies used in keyboard design. **[6]**

P.T.O.

Q6) a) Explain null modem communication using RS232 serial communication? **[10]**

b) What is ISR? How is it typically executed? **[6]**

SECTION - II

Q7) a) How does the pointer work in C? How can we optimize the coding using pointers? **[12]**

b) Write a note on IN-Circuit emulator. **[6]**

OR

Q8) a) Write a detailed note on QUEUE data structure with its use by System. **[10]**

b) Discuss Requirement Analysis related to an Embedded System. **[8]**

Q9) a) What is critical section problem in RTOS? **[8]**

b) Discuss inter-process communication and synchronization in RTOS. **[8]**

OR

*Q10)*a) Explain state transition diagram of RTOS. **[10]**

b) What is Thread? What are the advantages of Multithreading? **[6]**

*Q11)*How will you design an application for Chocolate Vending Machine in detail? (Write with design and code fragments.) **[16]**

OR

*Q12)*How will you design a application for sending Application Layer Byte Stream on a TCP/IP Network in detail. (Write with design and code fragment.) **[16]**

● ● ●