USN | | | | | | | | | | | 18EE644

Sixth Semester B.E. Degree Examination, June/July 2024
Embedded System

Time: 3 hrs. Max. Marks: 100

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1 a. Define Embedded system. Explain the classification of Embedded systems. (08 Marks)
  b. Explain the skills required for an Embedded system designer. (08 Marks)
  c. Explain in brief the components of Embedded system hardware. (04 Marks)

OR

2 a. Explain the various ROM memory variants of Embedded system with necessary figures. (10 Marks)
  b. With necessary diagram, explain the architecture of 6811 microcontroller. (10 Marks)

Module-2

3 a. Explain the Cordless bar code scanner example of Embedded system. (06 Marks)
  b. Explain with figure, the Sample and Hold circuit. (06 Marks)
  c. Explain in brief three bit DAC with an R – 2R ladder. (08 Marks)

OR

4 a. Explain two bit Flash ADC with a neat figure. (08 Marks)
  b. Explain with figure BiFET Analog Multiplexer. (08 Marks)
  c. Define the following with respect to ADC :
    i) Precision   ii) Resolution. (04 Marks)

Module-3

5 a. List and explain issues in Embedded system design. (08 Marks)
  b. Explain various design challenges in Embedded system. (08 Marks)
  c. Define the terms :
    i) Quantitative Data Acquisition System.
    ii) Qualitative Data Acquisition System. (04 Marks)

OR

6 a. Explain the case studies of Temperature Measurement Data Acquisition System. (10 Marks)
  b. Explain the Trade – Offs of the Embedded System design. (06 Marks)
  c. Explain the basic principles of digital filters. (04 Marks)

Module-4

7 a. Explain the Tasks , Task states and Scheduler of Operating system. (10 Marks)
  b. Explain with example the shared data problems. (06 Marks)
  c. Explain the concept of Stack memory. (04 Marks)

OR

8   a. Explain the Round Robin Software Architecture.   (08 Marks)
    b. Explain the Array data structure.   (06 Marks)
    c. Explain the function Queue Scheduling Architecture.   (06 Marks)

Module-5

9   a. Explain the specifications of RS232 system.   (08 Marks)
    b. Explain the concept of Address decoding.   (04 Marks)
    c. Explain the concept of switch debouncing in detail.   (08 Marks)

OR

10 a. Write and explain the basic approaches to interfacing multiple keys.   (08 Marks)
    b. Write the steps of transmitting data in asynchronous mode of communication.   (08 Marks)
    c. Explain the terms with respect to serial I/O devices.
        i)   Data terminal equipment.
        ii) Data communication equipment.   (04 Marks)

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