53 (IT 816) RTES

2017

REAL TIME AND EMBEDDED SYSTEMS

Paper : IT 816

Full Marks : 100

Time : Three hours

The figures in the margin indicate full marks for the questions.

*Answer **any five** questions.*

1. *(a)* Why design of an Embedded system is difficult ? Describe the challenges in Embedded system design. 10

   (b) "Every Embedded System is Real Time System". Whether the statement is true or false ? Justify your answer in details with example. 10

2. Describe Embedded System design process with diagram giving detailed description of each and every phase. 20

3. *(a)* Explain 8051 RAM organization with a diagram. What is stack and Bank 1 conflict ? 5+5=10

(b) Explain with example various addressing modes supported by 8051. 10

4. *(a)* Write a program to convert a series of ASCII numbers to packed BCD. Assume that the ASCII data is located in ROM locations starting at 300*H*. Place the BCD data in RAM locations starting at 60*H*. 10

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        ORG     300H
MY DATA : DB    "87675649"
```

(b) Write a program to add first ten even numbers : *i.e.* 2+4+6+. . . . + 20 10

5. Explain in details about working of I2*C* protocol. 20

6. Write short notes on : 2×10=20

(a) Debugging of an Embedded System

(b) Real Time Scheduling Algorithms.
