2123

B.E. (Electronics and Communication Engineering)
Seventh Semester
EC-701: Embedded System Design

Time allowed: 3 Hours   Max. Marks: 50

NOTE: *Attempt five questions in all, including Question No. I which is compulsory and selecting two questions from each Unit.*

x-x-x

I. Attempt the following:-

    a) Define Embedded Systems

    b) Example of RISC

    c) Flash Memory

    d) Superscalar architecture

    e) Role of Kernel

    f) Signal Conditioning

    g) Example of small scale embedded systems

    h) Timers and Interrupts

    i) Need of status register

    j) Name two applications of ARM processor   (10x1)

UNIT - I

II. a) Explain the difference between embedded and general purpose computing.

    b) Explain Embedded System Modeling with the help of suitable examples.   (2x5)

III. Explain the family history of Acorn RISC machine and the development tools required for ARM.   (10)

IV. Explain the following instructions with the help of examples:

    a) Multiply

    b) Single word and unsigned byte data transfer instructions

    c) Status registers to general register transfer instructions

    d) Branch with link and exchange   (10)

P.T.O.

UNIT - II

V.   a) Difference between three stage and five stage pipelining in ARM processor.

b) Explain the five stages of pipelining in ARM processor.   (2x5)

VI.   Explain the architecture of ARM processor, thumb instruction set and how it is different from 32-bit instruction set.   (10)

VII.   Explain with the help of diagrams, the following:

    a)   ARM 9

    b)   RTOS   (10)

x-x-x