Exam.Code:0931
Sub. Code: 6619

2122

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. 1 which is compulsory and selecting two questions from each Section.*

x-x-x

I.
    a)   What do you mean by CPSR?
    b)   What functions are performed by the control logic in the ARM memory interface?
    c)   Give four Thumb properties of ARM processor.
    d)   Write the stages through which 5-stage pipeline ARM processor performs execution.
    e)   Write a subroutine to output a text string immediately following the call **[5×2=10]**

SECTION A

II. a) Write a subprogram which copies a string of bytes from one memory location to another. The start of the source string will be passed in r1, the length (in bytes) in r2 and the start of the destination string in r3. **[5]**

    b) Explain ARM programmer's model in detail. **[5]**

III. a). Write a program to design 0 to 9 up counter using ARM instruction set. **[5]**

    b) Explain with the help of examples, Jump, Loop and Call instructions of ARM processor.**[5]**

IV. a) Which instructions are used to transfer data from General register to status register and from Status register to general register, explain with the help of example. **[5]**

    b) Explain the ARM instructions: CLZ, EOR, SBC, BIC, SWI. **[5]**

SECTION B

V. a) Using suitable examples explain Thumb data processing and Thumb software interrupt instructions. **[5]**

    b) With the help of suitable diagram show interfacing of LED 7 segment display with ARM Processor. **[5]**

VI. a) What are the major differences in ARM7 and ARM9? **[5]**

    b) Explain the 3-stage pipeline ARM organization. **[5]**

VII.   Write note on following:
    a) ARM memory interface **[5]**
    b) AMBA **[5]**

x-x-x