Exam.Code:0931
Sub. Code: 6927

1079

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) What is the difference between RISC and CISC architecture?

b) What is Current Program Status Register (CPSR) format? Give its significance.

c) Classify the different processors used in embedded system?

d) What do you mean by STMTB and STMFA?

e) What do you mean by stack addressing in ARM.? (5x2)

UNIT – I

II. a) Why does rl 5 give pc + 8 in the first cycle of an instruction and pc + 12 in subsequent cycles on an ARM7?

b) How the data instructions are processed in ARM? Discuss various register operands. (2x5)

III. a) How the invisible registers play vital role in executing an instruction? Discuss in detail about visible and invisible register of ARM processor.

b) What are the different addressing modes of ARM processor? Give example of each mode. (2x5)

IV. a) Write an program to expand an array of signed half-words into an array of words,

b) Explain the concept of super-pipelining in ARM processor. Also differentiate superpipelining from super scalar.

UNIT – II

V. a) Explain how we calculate time required to execute a program in 5 stage pipeline architecture. Explain ways to improve this time.

b) Explain ARM organization using 3 stages pipelining in ARM. (2x5)

P.T.O.

VI. a) Discuss the single register transfer, multiple register transfer, branch thump instructions with examples.

b) Write a program to turn on a LED at interval of one second. (2x5)

VII. a) Explain in detail the memory management in RTOS.

b) Draw and explain ARM 9 architecture. How it is different from ARM7 architecture. (2x5)

x-x-x