

Exam.Code:0931

Sub. Code: 33687

2125

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 Unit.

x-x-x

1. Attempt the following:-
 - a) Explain the concept of pipe latency while accessing memory.
 - b) Explain subroutine return instruction.
 - c) Explain big endian memory organization.
 - d) What are the hierarchical components in an embedded system design?
 - e) Detail about Privileged Mode in ARM processor. (5x2)

UNIT - I

2. What are the major side effects of superpipelining? Discuss in detail the basic model of super scalar pipeline. (10)
3. What is the architectural inheritance for ARM processor? List the ARM development tools. Further explain, which features does ARM have in common with many other RISC architectures? (10)
4. ARM processors has many invisible registers involved in executing an instruction, the values of these registers before and after the instruction is executed are not significant why? Explain in detail. (10)

UNIT - II

5. Draw a pipeline flow diagram along the lines of the one above to illustrate the timing of an ARM branch instruction. (The branch target is computed in the first execute cycle of the instruction and issued to memory in the following cycle). (10)
6. Write program to turn on and off a LED at an interval of 10second using Thumb instructions. How do the ARM and Thumb code sizes can be compared? (10)
7. (a) What are the signals used during bus transactions in AMBA architecture.
(b) Explain ARM7TDMI core interface signals and its different types of cycles. (2x5)

x-x-x