Code No: 5155C
JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M.Tech I Semester Examinations, February - 2014
MICRO CONTROLLERS FOR EMBEDDED SYSTEM DESIGN
(Embedded Systems)

Time: 3 Hours   **Max. Marks: 60**

Instructions:

i) Part A is compulsory Question for 20 marks.

ii) Part B consists of five questions with "either" "or" pattern. The student has to answer any
one. However students have to answer five questions from Part B (numbered from 2 to 6)

PART - A
(Answer all sub questions)

5×4 marks = 20

1.a) Describe about features of ARM architecture.

b) Explain Load (LDR) instruction using different addressing modes.

c) Explain thumb version of Multiple Register Load-Store instructions with an
example.

d) Explain about conditional execution in ARM processor.

e) Write notes on context switch.

PART - B

5×8 marks = 40

Answer either "a" or "b" from each question, but not both

2.a) i) Discuss about instruction pipeline in the ARM architecture.
      ii) Write about ARM Program Status Register.

OR

b) Explain about ARM interrupts and interrupt vector table.

3.a) Explain the addressing modes of ARM processor with an example each.

OR

b) Explain about ARM Data processing instructions.

4.a) Discuss about Thumb Version of STACK instructions with an example each.

OR

b) Explain about Thumb register usage? How to switch over from Thumb mode to
ARM mode or vice-versa?

5.a) Explain about Register allocation in the ARM processors.

OR

b) i) What is pointer aliasing ? How to avoid the pointer aliasing?
   ii) Explain about efficient memory organization techniques for a structure.

6.a) Discuss briefly about cache policies.

OR

b) Explain briefly about Memory Management Unit (MMU).

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