U.S.N | | | | | | | | | | |

P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belgaum)

Seventh Semester, B.E. - Electronics and Communication Engineering

Semester End Examination; Dec. - 2015

ARM Processor

Time: 3 hrs *Max. Marks: 100*

***Note**: Answer any **FIVE** full questions, selecting at least **TWO** full questions from each **part**.*

PART - A

1	a.	Explain how ARM instruction set differs from the pure RISC definition in several ways that make the ARM instruction set suitable for embedded application.	7
	b.	Describe the function of CPSR.	7
	c.	With respect to different ARM processor explain the stages involved during pipeline.	6
2	a.	Explain Barrel shifter. Mention any five shift operation.	7
	b.	Explain the operation of stack operation in thumb state, with an example.	7
	c.	What is the role of following instructions? i) SWP ii) SWI iii) STRB	6
3	a.	Show that do – while loop is more efficient than for loop.	8
	b.	What is pointer aliasing? With example explain how it is over come.	7
	c.	What is the significance of Bit fields?	5
4	a.	Write a 'C' program and corresponding ARM assembly code generated to print the square of the integers from 0 to 9.	10
	b.	With example explain scheduling of load instructions.	10

PART - B

5	a.	With an example explain saturated and rounded arithmetic.	10
	b.	Write the algorithm and corresponding 'C' code to find square root of a 32 – bit unsigned integer by Newton Raphson iteration.	10
6	a.	With a suitable diagram explain nested interrupt handler.	10
	b.	Write a note on interrupt latency.	4
	c.	How to enable and disable IRQ and FIQ interrupts?	6
7	a.	What is boot loader? Explain different stages of firmware execution flow.	10
	b.	With an example explain sand stone code structure.	10
8	a.	Mention the different rules to protect memory regions.	5
	b.	Explain the basic operation of cache controller.	5
	c.	What is cache thrashing? How to reduce frequency trashing?	10

* * * *