

**PES UNIVERSITY**

**Department of Computer Science & Engineering**

**Microprocessor & Computer Architecture Lab**

**UE23CS251B**

**WEEK 3 submission**

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| **Name of the Student** | **Amit Prakash** |
| **SRN** | **PES1UG23AM042** |
| **Section** | **A** |
| **Department** | **CSE+AIML** |
| **Campus** | **RR/** |

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| 1 | Write an ALP using ARM7TDMI to find the remainder of a number.(ie 10/3, remainder is 1)  .DATA  A: .word 10  B: .word 3  Program screen shot:    Screen shot of Register set output: |
| 2 | Write an ALP using ARM7TDMI to search for an element in an array of 16 bit each using Linear search technique  .DATA  A:.hword 1,2,3,4,5,6,7,8,9  Program screen shot:    Screen shot of Register set output and memory location: |
| 3 | Write an ALP using ARM7TDMI to to copy a block 128 bytes of data from location A to location B if the rate of data transfer rate is 16 bytes, LDM and STM instructions.  and  For the same transfer the block with auto-indexing.  .DATA    A:.WORD 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32  B:.WORD 0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0  Program screen shot:    Screen shot of Register set output and memory location: |
| 4 | Write an ALP using ARM7TDMI, for the given matric arranged in row major order, find the index of an element if coordinates of a matrix is given and also find the address of the indexed element. (Using MLA instruction)    Program screen shot:    Screen shot of Register set output and memory location: |
|  | Assignments Questions |
| 5 | a )Write an ALP using ARM7TDMI to perform Convolution using MUL instruction (Addition of multiplication of respective numbers of loc A and loc B)  b Write an ALP using ARM7TDMI to perform Convolution using MLA instruction (Addition of multiplication of respective numbers of loc A and loc B).  Program screen shot:    Screen shot of Register set output:    Program screen shot:    Screen shot of Register set output: |
| 6 | Write an ALP using ARM7TDMI to find the sum of all the BCD digits of a given 32 bit number.  (hint:788 =7+8+8)  Program screen shot:    Screen shot of Register set output: |