**EL 426 Midterm 1 practice test Answers**

**25th Jan, 2019**

1. Register r0 holds 0x01020304 and r1 holds the value 0x1000, then what would be the content of register r2 after following instruction. Assume big-endian memory system.

STR r0, [r1]

LDRH r2, [r1]

**0x0102**

1. What constant would be loaded into register r5 by following instruction?

MVN r5, #0x0F, 6

**0xC3FFFFFF**

1. Can an immediate value 0xAA000000 be loaded into any register using MOV instruction or not? Why?

**Yes, AA can be represented by 8 bits and that can be rotated left by 24 bits to generate the given number.**

1. Between SWI, FIQ, Data Abort and Pre-fetch abort, which exception has the highest priority?

**Data Abort**

1. If instruction LDMIB r5, {r0-r4} is executed then what will be loaded in register R1?

**R1 = [R5, #8]**

1. If r0 has the value 0x24, what is the content of r12 after executing the following instruction?

LDRB r12, [r0], #2

**Address Contents**

0x24 0x06

0x25 0xFC

0x26 0x03

0x27 0xFF

**0x06**

1. What is the significance of “!” in a load/store instruction?

**It updates the base register for pre-index mode**

1. If someone wants to copy the contents of any program status register in a register then which instruction needs to be used?

**MRS Ri, PSR**

1. Register r9 contains 0x1000 initially. After executing following instruction, register r1 is loaded from which memory location?

LDMIA r9, {r2, r0, r1, r4}

**r1 = [0x1004]**

1. If you want to store 1 to 250 decimal numbers in the memory in consecutive locations, then which instruction would be most memory efficient?

**DCB (because it allocates only single byte for each entry and numbers up to 255 can be represented by just a byte.)**

1. Write a single instruction which can multiply contents of register r4 by (128)10 and store the result to register r6, other than any multiply instruction.

**MOV r6, r4, LSL #7**

1. What will be the value of register r1 after execution of following code? Assume code is saved form 0x0 memory location.

ldr r0, =0x4020

ldr r1, =const

str r1, [r0]

const DCD 0xFFFF0000

**0xC**

1. What is wrong with the following instruction?

STR r0, [r1]!, #10

**“!” is used with post-index mode**

1. Initially, r5 contains the value 0x1000. What will be the content of register r5 after following instruction?

STR r4, [r5, #10]

**Unchanged**

1. Branch instructions have the range of + 32 Mbytes, how many offset bits it requires? Why?

**24. (In case of branch instruction, Jump would be in terms of words so last 2 bits are always 0)**

1. What will be the contents of register r0 after executing this code?

LDR R0,=1;

loop MOV R0,R0,LSL#1

BCC loop

**0x0**

1. When will the overflow flag be set? Give an example.

**When the operation performed on the operands affects the sign bit and the final answer calculated is wrong.**