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| **Started on** | Thursday, 10 June 2021, 2:00 PM |
| **State** | Finished |
| **Completed on** | Thursday, 10 June 2021, 2:25 PM |
| **Time taken** | 24 mins 19 secs |
| **Grade** | **8.00** out of 10.00 (**80**%) |

**Question 1**

Correct

Mark 1.00 out of 1.00

In a given ISA all the instructions are 24 bits long. A program starts at address 300 (in decimal). Which one of the following is a legal program counter (all values in decimal) ?

- a. 350
- b. 301
- c. 312 ✔
- d. 310

Your answer is correct.

The correct answer is:
312

**Question 2**

Incorrect

Mark 0.00 out of 1.00

Let the value stored in the register %eax be 0x1234. When the instruction movb %eax 0x1000 executes, the value stored in the memory location 0x1000 is ?

- a. Invalid Instruction
- b. 23
- c. 41
- d. 12 ✖

Your answer is incorrect.

The correct answer is:
Invalid Instruction

**Question 3**

Correct

Mark 1.00 out of 1.00

Let X = Y+Z and M=N*P, where all the variables are 6 bit long. The minimum number of bits required to correctly represent X and M without overflow is ?

- a. (12,12)
- b. (7,12) ✔
- c. (7,7)
- d. (13,6)

Your answer is correct.

The correct answer is:
(7,12)

**Question 4**

Correct

Mark 1.00 out of 1.00

For the operation X= Y+Z , where Y=-4 and Z=3 and both stored in 4 bit 2's complement form. The value of X is ?

- a. -1 and No Overflow ✔
- b. 1 and No Overflow
- c. 1 and Overflow
- d. -1 and Overflow

Your answer is correct.

The correct answer is:
-1 and No Overflow

**Question 5**

Correct

Mark 1.00 out of 1.00

Assume an ISA with 33 instructions. The minimum length possible of an instruction inside the ISA is ?

- a. 5 bits
- b. 4 bits
- c. 6 bits ✔
- d. 3 bits

Your answer is correct.

The correct answer is:
6 bits

**Question 6**

Not answered

Marked out of 1.00

Let X = 0x72AE. What will be the contents of X after the operation X = X >> 2 ?

a. 0x1CAB

b. 0x1DAA

c. 0x3957

d. 0x1DAB

Your answer is incorrect.

The correct answer is:
0x1CAB

**Question 7**

Correct

Mark 1.00 out of 1.00

Let X be a 4 bit variable in the 1's complement system. The maximum and minimum value that X can store is?

a. (8,-8)

b. (7,-7) ✔

c. (7,-8)

d. (8,-7)

Your answer is correct.

The correct answer is:
(7,-7)

**Question 8**

Correct

Mark 1.00 out of 1.00

The correct matching for the intermediate files and their corresponding compilation tool as taught in class is ? The list of files and the compilation tool is given below.

1 *.cpp 2. *.i 3.*.a 4. *.o
W. compiler X. linker Y. assembler Z. pre-processor

a. 1-W 2-Z 3-X 4-Y

b. 1-W 2-X 3-Z 4-Y

c. 1-Z 2-W 3-Z 4-X

d. 1-Z 2-W 3-Y 4-X ✔

Your answer is correct.

The correct answer is:
1-Z 2-W 3-Y 4-X

**Question 9**

Correct

Mark 1.00 out of 1.00

Assume memory addresses X and Y with values 0xA and 0xB respectively. What are the contents of X and Y after executing the following instruction in order? Here %eax = X and %ebx = Y

```
movl (%eax), %ecx
movl (%ebx), %edx
movl  %edx, (%eax)
movl %ecx, (%ebx)
```

a. X=0xB, Y=0xB

b. X=0xA, Y=0xA

c. X=0xA, Y=0xB

d. X=0xB, Y=0xA ✔

Your answer is correct.

The correct answer is:
X=0xB, Y=0xA

**Question 10**

Correct

Mark 1.00 out of 1.00

Let X be a 5 bit variable in the 2's complement system. The maximum and minimum value that X can store is?

a. (16,-16)

b. (15,-16) ✔

c. (16,-15)

d. (15,-15)

Your answer is correct.

The correct answers are:
(16,-16),

(15,-16)