Introduction to MIPS Assembly

1.) What values (in decimal) will be in registers $t0, $t1, and $t2 after this program executes?

```
li $t0, 3
li $t1, 4
addu $t2, $t0, $t1
```

2.) What values (in decimal) will be in registers $t0 and $t1 after this program executes?

```
li $t0, 6
li $t1, 4
subu $t0, $t0, $t1
```

3.) What values (in decimal) will be in registers $t0, $t1, and $t2 after this program executes?

```
li $t0, 3
li $t1, 4
move $t2, $t0
move $t0, $t1
move $t1, $t2
```

4.) What value (in decimal) will be in register $t0 after this program executes?

```
li $t0, 7
nor $t0, $zero, $t0
addiu $t0, $t0, 1
```

5.) What values (in decimal) will be in registers $t0, $t1, and $t2 after this program executes?

```
li $t0, 2
li $t1, 7
multu $t0, $t1
mflo $t2
```

6.) What values (in decimal) will be in registers $t0, $t1, and $t2 after this program executes?

```
li $t0, 24
li $t1, 3
divu $t0, $t1
mflo $t2
```

7.) What will the following program print, if run with SPIM?

```
li $a0, 12
li $v0, 1
syscall
```

8.) What value (in decimal) will be in register $t0 after this program executes?

```
li $t0, 7
ori $t0, $t0, 8
```

9.) What value (in decimal) will be in register $t0 after this program executes?

```
li $t0, 7
andi $t0, $t0, 8
```

10.) What value (in decimal) will be in register $t0 after this program executes?

```
li $t0, 7
xori $t0, $t0, 9
```

11.) What value (in decimal) will be in register $t0 after this program executes?

```
li $t0, 7
xori $t0, $t0, 15
```

12.) What does the following program print, if run with SPIM?

```
li $a0, 3
li $v0, 1
syscall
li $a0, '\n'
li $v0, 11
syscall
li $a0, 7
li $v0, 1
syscall
```

13.) What does the following program print, if run with SPIM?

```
li $a0, 4
li $v0, 1
syscall
li $a0, 8
li $v0, 1
syscall
```

14.) What does the following program print, if run with SPIM?

```
.data
foo:
   .asciiz "Some string\n"
bar:
   .asciiz "Some other string\n"
main:
  la $a0, foo
  li $v0, 4
  syscall
  li $v0, 10
  syscall
```

15.) What does the following program print, if run with SPIM?

```
.data
foo:
   .ascii "alpha"
bar:
   .asciiz "beta"
main:
  la $a0, foo
  li $v0, 4
  syscall
  li $v0, 10
  syscall
```

16.) What does the following program print, if run with SPIM, and 13 is input by the user?

```
li $v0, 5
syscall
addiu $a0, $v0, 7
li $v0, 1
syscall
```