

LE/EECS2021 M - Computer Organization (Winter 2018-2019)

MY COURSES

LE/EECS2021 M - COMPUTER ORGANIZATION (WINTER 2018-2019)

LAB TEST

LAB TEST (WEDNESDAY SESSION)

QUIZ NAVIGATION

Instructions: Choose any 2 out of 3 questions below:

1

2

3

Show one page at a time

Finish review

Started on	Wednesday, 13 February 2019, 7:49 PM
State	Finished
Completed on	Wednesday, 13 February 2019, 9:01 PM
Time taken	1 hour 11 mins
Grade	Not yet graded

Question 1
Not answered
Marked out of 10.00

Write an assembly code that will take a 32-bit user input (e.g. 0xABCDABCD) from console and save it into register x5 and sort it in the way that causes 0xAABCCDD. i.e. 4 bits in a group, and move them around.

Assume the upper 32 bits are all 0s, and don't touch them.

Save the sorted value into register x6. Test with 2 different values: 0x ABCDABCD, 0x F1E2D3C4. Print out the original value and print out its reverse value.

Take a screenshot after running code each time, name it as 'p11.png' and 'p12.png'. Make sure that the screenshots capture the console window which shows 'p1.a'. Place them into your submit folder.

Question 2
Not answered
Marked out of 10.00

At the instant the traffic light turns green, a car that has been waiting at the intersection accelerates. At the same instant, a truck overtakes and passes the car. The car can be described by the equations below (e.g. at t=0 both of them start at X_{car}=X_{truck}=0).

$X_{car} = t^2$

$X_{truck} = 20 * t$

Write an assembly code that increases the time and calculates the distance passed by the car and the truck. Print the value of t, t² and 20 * t to console. When will the covered distance become equal? Terminate the program at that moment.

Name your screenshot as 'p21.png', and put it into your submit folder. Name your program as 'p2.a', and put it into your submit folder.

Question 3
Complete
Marked out of 10.00

A prime number is one which is only divisible by 1 and itself (i.e. the remainder for its division by other numbers is not zero).

A composite number is a number that has two or more factors (e.g. 8 is considered composite because it has more than two factors that when multiplied together equal 8).

Write an assembly code that will take an integer input from console and print out if the number is prime or composite (set x10 to 1 if the number is prime and 0 if the number is composite, print out the factors. (The factors for 12 are 2, 3, 4 and 6). You should place the input at the top of the stack and the factors in the next 4 slots of the stack. For example, if the input is 12, the stack should look like: 12, 2, 3, 4, 6. Terminate the program with 13 and 135, take screenshots for them, label them as 'p31.png' and 'p32.png' and save them along with your program p3.a in the submit folder.