Exam 1 - Review Questions
Exam is on Friday 10 – 8 - 2021

Please Note that :

- **You must take the exam. No excuses will be accepted. I will not give a makeup exam regardless of the reason and a grade of zero will be assigned.**
- **You must log in with your net ID.**
- **You must have the camera on until you are done with your exam.**
- **Must leave the zoon session as soon as you are done with the exam.**
- **Exam is open notes only. <u>You are not allowed</u> to use any other resources such as the internet or Code::Blocks or any other IDE.**
- **Questions are given thru Canvas. You must answer the questions and submit your solution thru Canvas as well.**
- **Questions are shuffled and you will not be able to go back to your answered questions.**
- **Questions are T/F , multiple choice , conceptual and writing programs**
- **You will get a zero if any of the above was violated.**

Note : I will <u>not</u> post the solutions. We will go over the solutions on Wednesday .

Answer the following :

1) If a is 5, b is 10, c is 15 and d is 0 then what are the truth values of the following expressions?

(a)   c == a+b
(b)   a != 7
(c)   b <=a
(d)   a > 5
(e)   a+d >= c-b
(f)   d/a < c*b

2) Construct a logical expression to represent the following condition

   Weight is greater than 168 but less than or equal 189

3) Assume that int x = 10;   int y = 20;
indicate the order of evaluation for the following expression

int z = (x + y) * (x - y) / (2 * y) % y;

and show the final value of the variable z

4) Assume that int x = 10; int y = 5; what is the final value of the variable x.

x++;
x -= 10;
x *= 5;

5) Is the following expression a valid expression. (Yes or No) .
If it is a valid expression evaluate the expression. If it is not, explain why
?

$$(5 \; != 4) \; \&\& \; (((3 > 5) \; || \; (10 <= 10)) \; \&\& \; true \;)$$

6) Which of the following tests **could** "crash"? Why or why not?

if ((x == 0) && (1/x > 2))
    cout << "Reciprocal of x is bigger than 2" << endl;

if ((x > 0) || (sqrt(x) < 9))
    cout << "x is between 0 and 3" << endl;

7) Suppose we want to store the value 1.5 into a double variable d.
    Which of the following would **not** work?

    a. d = 3.0/2;
    b. d = 1.5;
    c. d = 3/2;
    d. d = 1 + 0.5;
    e. all of the above will work

8) Assuming that i is some integer, what is the difference between:

if ((i % 2) == 0)
     cout << "i is an even number " << endl;
     cout << "i is an odd number " << endl;

if ((i % 2) == 0)
     cout << "i is an even number " << endl;
else
     cout << "i is an odd number " << endl;

9) Convert the following code into a switch structure.
     Make the switch structure as short as possible (do not repeat code).

```
if (i == 3 || i == 5)
      {      n++;
             tryagain = 0;      }
else if (i == 4) || i == 10)
      {      n = 5;        }
else if (i == 6)
      {      n = 6;        }
else  {      n = 0;
         tryagain = 1;      }
```

10) Write an `if` statement that will give 5 extra credit points to students who answer Question A correctly, and 10 extra points if they answer Question A and Question B correctly. Name the variable intBonus.

11) Write a C++ Program that prompts a user to enter a character from the keyboard . The program checks and displays on the screen Whether a character is **Vowel** or **Consonant**.

12) Write a C++ program to find whether a given year is a leap year or not. leap year is a year that is divisible by 400 or 4

13) Write a C++ program to check whether a character is an alphabet, digit or special character.