**CPSC 120-2014-SpringFinalPractice**

**Section #: \_\_\_\_\_\_\_\_\_\_Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**DO NOT USE NOTES UNLESS INSTRUCTED!**

1. **Short Answer**
2. List the three types of loops and their differences. In what situations are each preferable over the others?
3. Describe the differences between a switch statement and if-else chain. Give an example of when one would be preferable over the other (and vice-versa).
4. What are different types of program errors? Please give one example for each type. How should we debug for different types of errors?
5. What is the difference between a one-dimensional and two-dimensional array? What is a partially-filled array? Draw a diagram of a partially filled two-dimensional 3x3 array (any values) and an empty one-dimensional array of size 5.
6. What is a loop inside a loop called? Give an example of when this would be necessary.
7. What is an off-by-one error? What is a counter? What is an accumulator? What is a sentinel? How do we get the size of an one-dimensional array?
8. What does it mean to use the static\_cast operator on a variable? Give an example of when using static\_cast would be necessary.
9. **Multiple Choice**
10. What does the following line output to the screen?

int stuff[] = {2, 3, 4, 1};

cout << stuff[3];

a. 4

b. 1

c. 2

d. 3

1. Assuming ar is initialized and is 5 x 5, what is the output of the following code?

for(int c = 0; c < 3; ++c) {

for(r = 0; r < 3; r++)

cout << ar[c][r] << " ";

cout << endl;

}

* 1. Prints out each row of ar per line
  2. Prints out each column of ar per line
  3. Does not compile
  4. None of the above

1. A byte consists of how many bits?
   1. 6
   2. 7
   3. 8
   4. 9
   5. 10
2. What is the value of total after the following statements are executed?

int total, i;

total = i = 0;

for(int i = 0; i <= 5; ++i)

total+=i; 15

* 1. 5
  2. 10
  3. 0
  4. Compiler error

1. What is the output of the following code?

for(int r = 0; r < 3; r++)

for(int c = 0; c < 4; c++)

cout<<"\*";

* 1. \*\*\*\*
  2. \*\*\*\*\*\*\*\*\*\*\*\*
  3. None of the options
  4. \*\*\*\*

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1. What is the value of sum after running the following code?

int sum = 0;

while(true)

{

if(sum > 0)

break;

else

sum+=1;

}

* 1. 4
  2. 0
  3. 1
  4. Infinite loop (sum infinitively increases)

1. What is the output of the following code?

int hello = 3.14;

double div = static\_cast<double>(hello)/2;

cout << div << endl;

* 1. 1.57
  2. 1
  3. 1.5
  4. 3.14

1. Which of the following statements is NOT legal?

a. int array[] = {1, 2, 3, 4};

b. double list[5] = {5.5, 3.14};

c. char grid[][2] = { {1}, {2} };

d. string crossword[2][] = { {4}, {5} };

1. What is the value of x after the following statements?

int x;

x = 25/7;

* 1. 15
  2. 3
  3. 4
  4. 3.75

1. What is the value of x after the following statements, assuming the array z has values 1, 2, 5, 4, 3 inside of it?

int x = -999;

for(int i = 0; c < 5; ++c)

if(x < x[c])

x=x[c];

* 1. 5
  2. 1
  3. -999
  4. None of the above