

## 1. (6 pts, 2 pt each) Multiple Choice Questions:

- a. The value of the C++ expression:  $2 + \text{int}(25.5) / 5 \% 2 - 3$  is:
- A) -1
  - B) 0
  - C) 5
  - D) 4.2
  - E) none of the above
- b. If x is a float variable containing a positive value, which of the following statements outputs the value of x, **rounded to the nearest tenth** digit of the decimal, i.e., 4.56 is rounded to 4.6, and 4.25 is rounded to 4.2?
- A) `cout << int(x*10) + 0.5;`
  - B) `cout << int(x*10 + 0.5)/10.0;`
  - C) `cout << int(x*10)/10;`
  - D) `cout << float(x + 0.05);`
  - E) `cout << x + int(0.05);`
- c. If p is a Boolean variable, which of the following logical expressions always has the value **true** i.e., if p is true, the expression is true, and if p is false, the expression is also true?
- A) `p && p`
  - B) `p || p`
  - C) `p && !p`
  - D) `p || !p`
  - E) b and d above
2. (4 pts) Write a Boolean expression that is true when the value of the variable *temperature* is in the range between 33 and 211 degrees inclusive, and value of string variable *city* is equal to "Nashville".
3. (10 pts, 5 pts each) What is the output from the following two code segments? Write your answer to the right of the code
- (a) 

```
int sum = 0, count=0;
while (count < 4) {
    sum += count;
    count ++;
}
cout << "count is " << count << endl;
cout << "sum is " << sum << endl;
```
- (b) (5 pts) 

```
int value=1000;
while (value > 0)
{
    cout << value/100 << " " << value%100 << endl;
    value = value - 200;
}
```

4. (10 pts) Complete the following C++ program that reads a sequence of integer numbers from a data file named “numbers.dat”, and displays the largest of these numbers.

```
#include <iostream>
#include <fstream>
#include <cassert>
using namespace std;
```

```
int main()
{
    int value;
    int largest;
    ifstream myIn;
```