

## 1. (10 pts, 2 pt each) Multiple Choice Questions:

- a. What will the following code display?

```
int x = 0;
while (x < 5)
{
    cout << x << " ";
    x++;
}
```

- a. 0 1 2 3 4 5
  - b. 0 1 2 3 4
  - c. This is an infinite loop
- b. What is the output of the following code segment?

```
n = 1;
while (n <= 5)
    cout << n << ' ';
    n++;
```

- a. 1 2 3 4 5
  - b. 1 1 ... and on forever
  - c. 1 2 3 4 5 6
  - d. 1 2 3 4
  - e. 2 3 4 5
- c. How many times will the following loop display "Looping again!"?

```
for (int i = 0; i <= 20; i++)
    cout << "Looping again!" << endl;
```

- a. 20
  - b. 19
  - c. 21
  - d. an infinite number of times
- d. How many times will the following loop display "Looping!"?

```
for (int i = 20; i > 0; i--)
    cout << "Looping!" << endl;
```

- a. 20
  - b. 19
  - c. 21
  - d. an infinite number of times
- e. What is the output of the following code segment?

```
n = 10;
do{
    cout << n << ' ';
    n=n-1;
}

while (n > 5);
```

- a. 10 9 8 7 6
- b. 9 8 7 6
- e. This is an infinite loop

2. (10 pts) Write a C++ do-while loop to ask the user to enter a date as month and year values. Continue to ask the date entered is invalid. A valid date should have a month value between 1 and 12 inclusive and the year value between 1 and 2020 inclusive.

3. (10 pts) Write a C++ code to count the number of words in a sentence. Assuming the sentence is input by the user and stored in a string type variable "text". The words in the sentence are separated by a single space.

```
string text;  
int count;  
// declare other variables as needed
```

```
cout << "Enter a line of text:";  
getline(cin, text);
```

```
// complete the code below to find the number of words in "text"; use "count" to count the number of  
words
```