

CS 12 - Basic Proficiency Exam

1. Determine what the following code will output.

```
(a)  int i=5, j=2;
      i = i * 8 + j / 2;
      cout << i << " " << j ;
```

```
(b)  void play (int & ref1, int ref2)
      {
        if (ref1 > 0 && ref2 > 0)
          ref1 = 7;
        else
          ref1 = ref2;
      }

      main()
      {
        int ping = 936, pong = -1;
        play(ping, pong);
        cout << ping << " " << pong;
      }
```

2. How many times will the following loop body execute? What values will *sum* and *counter* hold after the program code has completed its execution?

```
sum = 0;
counter = 0;
while (counter <= 20)
{
  sum = sum + counter;
  counter = counter + 3;
}
```

3. Write a function to compute the perimeter of a rectangle. The perimeter of a rectangle would be the total length around the edge of the rectangle. It should accept two parameters of type double as input for the length and width and it should return the perimeter as type double.

4. Define an array of 10 characters. Write code to initialize each element in the array. Write code to print out each element on a separate line.

5. Define a structure called *employee* containing an integer to hold the employee id and a float to hold the employee's salary. Write code to set each structure member to some value.

6. Given two variables, x and y , write a code segment that swaps their values. For example, (and this is only an *example*), if x has value 5 and y has value 3, then at the end of the code segment, x will have the value 3 and y will have the value 5.