Question 1 **1 / 1 point**

Consider using a _____ when the first item entered is the first item removed.

- set
- ✔ queue
- tree
- stack

Question 2 **1 / 1 point**

Use the **IntStack** class presented in lecture. What is the output of the code?

```
IntStack s;
s.push (20);
s.push (40);
s.push (50);
s.pop ( );
cout << s.count ( );
```

- 0
- ✔ 2
- 3
- 10

Question 3 **0 / 1 point**

Use the **IntBoundQueue** class presented in lecture. What are the values of **front** and **rear** and **size** variables after the code executes?

IntBoundQueue q;
q.enqueue (20);
q.enqueue (40);

- front: 0
  rear: 4
  size: 2
- front: 0
  rear: 2
  size: 2
- ✗ front: 1
  rear: 2
  size: 2
- ➡ front: 0
  rear: 1
  size: 2

Question 4 — 1 / 1 point

Use the **IntBoundQueue** class presented in lecture. What are the values of **front** and **rear** and **size** variables after the code executes?

IntBoundQueue q;
q.enqueue (20);
q.enqueue (40);
q.dequeue( );

- ✓ front: 1
  rear: 1
  size: 1
- front: 0
  rear: 1
  size: 1
- front: 2
  rear: 3
  size: 1
- front: 1
  rear: 1
  size: 2

Question 5 — 0 / 1 point

Which statement is true about the function?

```
int f ( )
{     int * a = new int [2];
      a[0] = 15;
      a[1] = 25;
      return a[0] + a[1];
}
```

- Pointer variable **a** is stored on the run-time stack and the array is store on the run-time heap.
- Pointer variable **a** is stored on the run-time heap and the array is store on the run-time stack.
- Both pointer variable **a** and the array are stored on the run-time stack
- Both pointer variable **a** and the array are stored on the run-time heap

Question 6 **1 / 1 point**

The **class specification** stores information about "what" the class does and lists only function prototypes.

- True
- False

Question 7 **1 / 1 point**

Class **Rectangle** models a rectangle shape. The class specification is stored in _____ and the class implementation is stored in _____.

- Rectangle.h, Rectangle.h
- Rectangle.cpp, Rectangle.h

✔ Rectangle.h, Rectangle.cpp

Rectangle.cpp, Rectangle.cpp

Question 8 **1 / 1 point**

A class will use a dynamic array. This array is initially created using the **new** operator in the _____ function.

✔ constructor

modifier

destructor

accessor

Question 9 **1 / 1 point**

Which code segment illustrates use of the copy constructor for class **string?**

string s1 ("apple");
string s2 ("banana");

✔ **string s1 ("apple")**
string s2 (s1);

string words [5];

string s1;
s1 = "apple";

Question 10 **1 / 1 point**

The copy constructor function for a class is called _____.

when a new object is constructed from an existing object

- when an object is passed by value to a function
- when a function returns an object
- ✓ in all of the listed situations

Question 11 **1 / 1 point**

If a class that uses a dynamic array does not include a copy constructor that makes a deep copy of the parameter object, which problem will occur?

- memory leak
- dangling pointer
- ✓ two objects point to the same dynamic array
- no problems will occur

Question 12 **1 / 1 point**

A class uses a dynamic array. The delete [ ] operator releases this memory in the _____ function.

- accessor
- copy constructor
- ✓ destructor
- default constructor

Question 13 **1 / 1 point**

A class uses a dynamic array. If the memory used by this array is not released, a _____ occurs

- ✔ memory leak
- dangling pointer
- two objects point to the same array
- none of the listed problems occur

Question 14 **1 / 1 point**

When adding a new item to a stack, call the _____ function.

- ✔ push
- enqueue
- pop
- dequeue

Question 15 **1 / 1 point**

In a stack class, the user can only modify the data structure via the **push** and **pop** functions and may not directly access interior indexes of the array

- ✔ True
- False

Question 16 **1 / 1 point**

A queue is used for _____ data storage.

- Last In - First Out
- ✓ First In - First Out
- First In - Last Out
- None of the above

Question 17 **1 / 1 point**

In a circular array, algorithms loop back to index 0 when the end of the array is encountered.

- ✓ True
- False

Question 18 **1 / 1 point**

Refer to the **IntBoundQueue** developed in lecture. What is the flow of statements executed in the **enqueue** function?

- store the item at current **rear**, increment **size,** add 1 to rear
- ✓ change **rear** to the next available index (wrapping around if necessary), store the item at **rear**, increment **size**
- increment **front** to the next available index (wrapping around if necessary), decrement **size**
- store the item at current **rear**, increment **size,** change **rear** to the next available index (wrapping around if necessary)

Question 19 **1 / 1 point**

A class that stores a group of items typically offers a boolean function that returns true if there are no items and false if there is at least one item.

- ✓ True
- False

Question 20

1 / 1 point

A class using dynamic memory should write a copy constructor that makes a deep copy of the other object to be stored in the new object.

- ✔ ◯ True
- ◯ False