



Sample Exam Questions

This document contains examples of the types of questions that will be on the second exam, not necessarily the content of those questions. In other words, its purpose is to illustrate the format and style of the questions. Some questions may be more difficult than those presented here.

1. Convert the following infix expression to postfix: $a + b / (c * d + e) - g * h$
2. Write an implementation of the `insert()` method of a sorted linked list.
3. Write a destructor for a single-linked list.
4. If the following code fragment is correct, write its output, otherwise state why it is not correct.

```
int *q = new int[8];
for (int i = 7; i >= 0; i--) {
    *q = 20 - i;
    cout << *q << ", ";
    q++;
}
```

5. Given the class interface

```
class myClass {
public:
    // constructor dynamically allocates uninitialized array of size N
    myClass ( int N = 1);
    ~myClass(); // deallocates array
    void print(ostream&); // prints array contents one per line to ostream
private:
    int* data; // allocated array
    int size; // size of array
};
```

- (a) convert it to a template class.
 - (b) write an implementation of the constructor
6. For each of the following statements, circle **T** if it is correct and **F** otherwise.
 - (a) **T F** A queue can be used to check whether a string has balanced parentheses.
 - (b) **T F** If a class has a pure virtual function, we cannot declare an object of that class.
 - (c) **T F** If a function in a try block calls a function that throws an exception of type `int`, the program containing that try block will terminate unless there is an exception handler with an `int` parameter following the try block.
 - (d) **T F** The find operation will take, on average, $N/2$ steps to find a key in an unsorted linked list.