CST8219: Fall2019 Max, marks: 30 Surbhi Bahri

Test 1(October 18th, 2019)

Last Name: _____

First Name: _____

Student Number: _____

Instructions:

1. Print your name and student number.
2. Make sure to have only on selection for MC questions, two selections of MC will be considered as a wrong answer even if the correct one is one of them.
3. Check that you have all 6 PAGES before beginning the exam.
4. Pace yourself – attempt in all questions. The exam period is 50 minutes.
5. Use the blank spaces on exam pages for rough work. No scrap paper is permitted.
6. Turn off all electronic devices you have and put them in a safe place away from your desk.
7. Hand in the exam booklet before leaving the lecture theatre.
9. The total marks of the test are 30 and this test is worth 17.5% of your final mark.

I have read, understood, and will comply with all of the above instructions:

_____ _____

Sign your full name here date

CST8219: Fall2019 Max, marks: 30 Surbhi Bahri

Test 1(October 18th, 2019)

Choose the best answer of each of the following statements: (1 * 6 = 6Marks)

1) Which of the following gives the [value] stored at the address pointed to by the pointer: ptr?
   a) Value(ptr)
   b) ptr
   c) &ptr
   d) *ptr

2) Choose the right option
   String* x,y;
   a) x is a pointer to a string, y is a string
   b) y is a pointer to a string, x is a string
   c) Both x and y are pointers to string types
   d) None of the above

3) What does the following statement mean?
   Int (*fp)(char*)
   a) Pointer to a pointer
   b) Pointer to an array of chars
   c) Pointer to function taking a char* argument and return an int
   d) Function taking a char* argument and returning a pointer to int

4) A void pointer cannot point to which of these?
   a) Methods in C++
   b) Class Member in C++
   c) Both a and b
   d) None of the above

5) Which operator returns address of unallocated blocks in memory?
   a) The Delete operator
   b) The empty operator
   c) The New operator
   d) All of them

6) The correct statement for a function that takes pointer to a float, a pointer to a pointer to a char and returns a pointer to a pointer to a integer is _____
   a) Int **func(float**, char**)
   b) Int *fun(float*, char*)
   c) Int **fun(float*, char**)
   d) Int ***fun(*float, **char)

7) What will happen in the following C++ code snippet? Explain (2 Marks)

```
Int a = 100, b = 200;
Int *p = &a, *q = &b;
P = q;
```

a) b is assigned to a
b) p now points to b
c) a is assigned to b
d) q now points to a

8) How delete [] is different from delete? (2 Marks)

9) What are the differences between a class and a structure? For example, do they store data differently, and does a struct support member functions? (2Marks)

10) How many times will A be printed? (1 Mark)

```
class A
{

public:
   ~A(){
   cout <<"A";
   }
};
int main()
{
   A obj;
   obj.~A();
}
```

a) 0
b) 1
c) 2
d) Error

11) Write a program to access array elements using Pointer. (3 Marks)

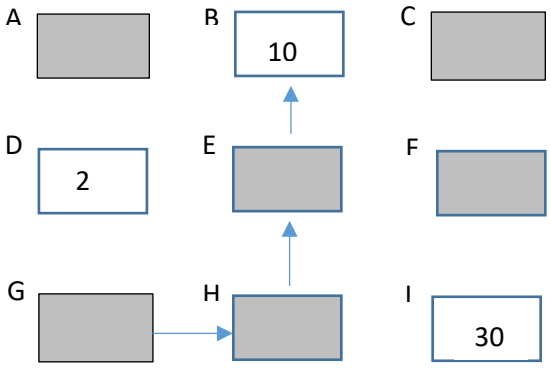
12) Instantiate with simple code syntax to explain the declaration and definition of Constructor and Destructor. (3Marks)

13) How a sharp programmer can avoid inappropriate memory management? Also list the common bugs of memory allocation. (3Marks)

14) Which keyword is used to access the variable in the namespace? Epitomise. (3Marks)

15) **5 marks**

Here is a diagram of integers and pointers. Open rectangles are `int`s with their values written in. Shaded rectangles are pointers, typed appropriately.




In the diagram below write in the final values of all the `int`s and draw the pointers after the following statements have executed:

```
A = &I;

F = &E;

C = *H;

D += **F + I;

B *= *A;
```