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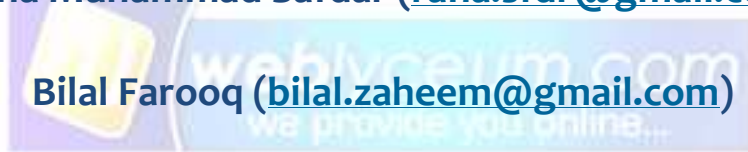
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**FINALTERM EXAMINATION**  
**Spring 2010**  
**CS201- Introduction to Programming**

**Question No: 1 (Marks: 1) - Please choose one**

In if structure the block of statements is executed only,

- ▶ When the condition is false
- ▶ When it contain arithmetic operators
- ▶ When it contain logical operators
- ▶ **When the condition is true**

**Question No: 2 (Marks: 1) - Please choose one**

Header file: **fstream.h** includes the definition of the stream classes \_\_\_\_\_.

- ▶ ifstream, fstream, cout
- ▶ **ifstream, fstream, ofstream**
- ▶ fstream, cin, cout
- ▶ None of the above

**Question No: 3 (Marks: 1) - Please choose one**

To access the data members of structure \_\_\_\_\_ is used.

- ▶ **dot operator (.)**
- ▶ \* operator
- ▶ operatorà
- ▶ None of given.

**Question No: 4 (Marks: 1) - Please choose one**

eof(), bad(), good(), clear() all are manipulators.

- ▶ True
- ▶ **False**

**Question No: 5 (Marks: 1) - Please choose one**

Which kind of functions can access private member variables of a class?

- ▶ **Friend functions of the class**
- ▶ Private member functions of the class
- ▶ Public member functions of the class
- ▶ Friend, private and public functions

**Question No: 6 (Marks: 1) - Please choose one**

The return type of operator function must always be void.

- ▶ True
- ▶ **False**

**Question No: 7 (Marks: 1) - Please choose one**

Friend function of a class is \_\_\_\_\_ .

- ▶ Member function
- ▶ **Non-member function**
- ▶ Private function
- ▶ Public function

**Question No: 8 ( Marks: 1 ) - Please choose one**

Function implementation of friend function must be defined outside the class.

- ▶ True
- ▶ **False (any where in the class)**

**Question No: 9 ( Marks: 1 ) - Please choose one**

The normal source of `cin` object is,

- ▶ File
- ▶ Disk
- ▶ **Keyboard**
- ▶ RAM

**Question No: 10 ( Marks: 1 ) - Please choose one**

Which of the following is correct way to initialize a variable `x` of `int` type with value 10?

- ▶ `int x ; x = 10;`
- ▶ `int x = 10;`
- ▶ `int x, x = 10;`
- ▶ **`x = 10;`**

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**Question No: 11 ( Marks: 1 ) - Please choose one**

Consider the following code segment. What will be the output of the following program?

```
int func(int) ;
int num = 10 ;
int main(){
int num ;
num = 5 ;
cout << num ;
cout << func(num) ;
}
int func(int x){
return num ;
}
```

- ▶ 5, 5
- ▶ 10, 5
- ▶ **5, 10**
- ▶ 10, 10

**Question No: 12 ( Marks: 1 ) - Please choose one**

With template function, the compiler automatically detects the passed data and generates a new copy of function using passed data.

▶ **True**

▶ False

**Question No: 13 ( Marks: 1 ) - Please choose one**

What will be the correct syntax to declare two-dimensional array of float data type?

▶ float arr{2}{2} ;

▶ **float arr[2][2] ;**

▶ float arr[2,2] ;

▶ float[2][2] arr ;

**Question No: 14 ( Marks: 1 ) - Please choose one**

The first parameter of operator function for << operator,

▶ Must be passed by value

▶ **Must be passed by reference**

▶ Can be passed by value or reference

▶ Must be object of class

**Question No: 15 ( Marks: 1 ) - Please choose one**

Heap is constantly changing in size.

▶ **True**

▶ False

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**Question No: 16 ( Marks: 1 ) - Please choose one**

While calling function, the arguments are assigned to the parameters from

▶ **left to right.**

▶ right to left

▶ no specific order is followed

▶ none of the given options.

**Question No: 17 ( Marks: 1 ) - Please choose one**

Classes defined inside other classes are called \_\_\_\_\_ classes

▶ looped

▶ **nested**

▶ overloaded

▶ none of the given options.

**Question No: 18 ( Marks: 1 ) - Please choose one**

If we define an identifier with the statement `#define PI 3.1415926` then during the execution of the program the value of PI \_\_\_\_\_

▶ can not be replace

▶ None of the given options

▶ **Remain constant.**

▶ can be changed by some operation

**Question No: 19 ( Marks: 1 ) - Please choose one**

Which value is returned by the destructor of a class?

- ▶ A pointer to the class.
- ▶ An object of the class.
- ▶ A status code determining whether the class was destructed correctl
- ▶ **Destructors do not return a value.**

**Question No: 20 ( Marks: 1 ) - Please choose one**

Every class contains \_\_\_\_\_.

- ▶ Constructor
- ▶ Destructor
- ▶ **Both a constructor and a destructor**
- ▶ None of the given options

**Question No: 21 ( Marks: 1 ) - Please choose one**

A template function must have

- ▶ **One or more than one arguments**
- ▶ Only one argument
- ▶ Zero argument
- ▶ None of the given options

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**Question No: 22 ( Marks: 1 ) - Please choose one**

Structured Query Language is used for \_\_\_\_\_

- ▶ **Databases Management**
- ▶ Networks
- ▶ Writing Operating System
- ▶ none of the given options

**Question No: 23 ( Marks: 1 ) - Please choose one**

When a call to a user-defined function finishes, the variable defined inside the function is still in existence.

- ▶ True
- ▶ **False**

**Question No: 24 ( Marks: 1 ) - Please choose one**

The precedence of an operator can be changed through operator overloading.

- ▶ True
- ▶ **False**

**Question No: 25 ( Marks: 1 ) - Please choose one**

A Matrix can be composed of ints, floats or doubles as their elements. Best way is to handle this , \_\_\_\_\_

- ▶ Write a separate class to handle each
- ▶ Use templates
- ▶ Use strings to store all types
- ▶ None of the given options

A Matrix can be composed of ints, floats or doubles as their elements. Instead of handling these data types separately, we can write Matrix class as a template class and write code once for all native data types.

Write Matrix class as a template class and write code once for all native data types

**Question No: 26 ( Marks: 1 ) - Please choose one**

"delete" operator is used to return memory to free store, which is allocated by the "new" operator.

- ▶ True
- ▶ False

**Question No: 27 ( Marks: 2 )**

What is the difference between **switch** statement and **if** statement.

The if statement is used to select among two alternatives. It uses a boolean expression to decide which alternative should be executed. The switch statement is used to select among multiple alternatives. It uses an int expression to determine which alternative should be executed.

**Question No: 28 ( Marks: 2 )**

How can we initialize data members of contained object at construction time?

A **constructor** (sometimes shortened to **ctor**) in a class is a special type of subroutine called at the creation of an object. It prepares the new object for use, often accepting parameters which the constructor uses to set any member variables required when the object is first created.

**Question No: 29 ( Marks: 2 )**

How the data members of a class are initialized with meaningful values?

Sometime back we saw an odd behavior in which C++ class data members were not getting correctly initialized due to memory corruption. It was discovered that this

memory corruption was due to an unbalanced `#pragma pack` data alignment. In our case, this behavior was observed right after the constructor of the class was executed. To troubleshoot this issue, the next thing was to dump the class in WinDBG using the command `dt`. This would show a layout similar to below:

**Question No: 30 (Marks: 2)**

Can we overload `new` and `delete` operators?

- 1) We cannot use the array size declarator with a class-specific user-defined `new` function. Arrays of objects are always allocated with the global `new`.
- 2) Overloaded `new` and `delete` operators should be provided in pairs.
- 3) The overloaded `delete` operator is invoked after the last line of the destructor has been executed.

**Question No: 31 (Marks: 3)**

What will be the output of following functions if we call these functions three times?

1)

```
void func1(){
int x = 0;
x++;
cout << x << endl;
}
```

2)

```
void func2(){
static int x = 0 ;
x++;
cout << x << endl ;
}
```

**Question No: 32 (Marks: 3)**

What is the keyword `'this'` and what are the uses of `'this'` pointer?

**Question No: 33 ( Marks: 3 )**

Suppose an object of class A is declared as data member of class B.

- (i) The constructor of which class will be called first?
- (ii) The destructor of which class will be called first?

**Question No: 34 ( Marks: 5 )**

Write the general syntax of a class that has one function as a friend of a class along with definition of friend function.

**Question No: 35 ( Marks: 5 )**

Write down the disadvantages of the templates.

**Question No: 36 ( Marks: 5 )**

Write a program which defines five variables which store the salaries of five employees, using setw and setfill manipulators to display all these salaries in a column.

**Note:** Display all data with in a particular width and the empty space should be filled with character x

**Output should be displayed as given below:**

```
xxxxxx1000
xxxxxx1500
xxxxxx20000
xxxxxx30000
xxxxxx60000
```

