

**FINAL TERM EXAMINATION**  
Spring 2010  
CS201- Introduction to Programming

Time: 90 min  
Marks: 58

Student Info	
Student ID:	
Center:	
Exam Date:	

For Teacher's Use Only									
Q No.	1	2	3	4	5	6	7	8	Total
Marks									
Q No.	9	10	11	12	13	14	15	16	
Marks									
Q No.	17	18	19	20	21	22	23	24	
Marks									
Q No.	25	26	27	28	29	30	31	32	
Marks									
Q No.	33	34	35	36					
Marks									

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

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Operator overloading can be performed through\_\_\_\_\_.

- ▶ Classes
- ▶ Functions
- ▶ Operators
- ▶ Reference

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

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When a value is referred by a normal variable then it is known as,

- ▶ Direct Reference
- ▶ Indirect Reference
- ▶ Partial Reference
- ▶ Proper Reference

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

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Which of the following function is used to increase the size of already allocated memory chunk?

- ▶ malloc
- ▶ calloc

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▶ realloc

▶ free

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

---

Which of the following is NOT a preprocessor directive?

▶ #error

▶ #define

▶ #line

▶ #undef

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

---

The stream objects **cin** and **cout** are included in which header file?

▶ iostream.h

▶ fstream.h

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▶ istream.h

▶ ostream.h

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

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Overloaded delete operator function takes the same parameter as an argument returned by new operator function.

▶ True

▶ False

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

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When an array of object is created dynamically then there is no way to provide parameterized constructors for array of objects.

▶ True

▶ False

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

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C is widely known as development language of \_\_\_\_\_ operating system.

▶ Linux

▶ Windows

▶ Unix

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- ▶ Mac OS

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

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Computer can understand only machine language code.

- ▶ True
- ▶ False

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

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We can not define a function as a friend of a Template class.

- ▶ True
- ▶ False

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

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What will be the value of 'a' and 'b' after executing the following statements?

```
a = 3;  
b = a++;
```

- ▶ 3, 4
- ▶ 4, 4
- ▶ 3, 3
- ▶ 4, 3

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

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

```
int addValue (int *a){
int b = (*a) + 2;
return b ;
}
main () {
int x =6 ;
cout << x << “,” ;
cout << addValue(&x) << “,” ;
cout << x ;
}
```

- ▶ 6,8,6
- ▶ 6,6,8
- ▶ 6,8,8
- ▶ 6,6,6

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

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\_\_\_\_\_ is used to trace the logic of the program and correct the logical errors.

- ▶ Compiler
- ▶ Editor
- ▶ Linker
- ▶ Debugger

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

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new and delete are \_\_\_\_\_ whereas malloc and free are \_\_\_\_\_.

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- ▶ Functions, operators
- ▶ Classes, operators
- ▶ Operators, functions
- ▶ Operators, classes

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

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Like member functions, \_\_\_\_\_ can also access the private data members of a class.

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- ▶ Non-member functions
- ▶ Friend functions

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- ▶ Any function outside class
- ▶ None of the given options

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

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Which situation would require the use of a non-member overloaded operator?

- ▶ The overloaded operator is an Assignment operator.
- ▶ The left most operand is an object of a class.
- ▶ The left operand is built-in data type.
- ▶ The operator returns a reference.

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

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The stream insertion and stream extraction operators are already overloaded for \_\_\_\_\_.

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- ▶ User-defined data types
- ▶ Built-in data types
- ▶ User-defined and built-in data types
- ▶ None of the given options

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

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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 replaced
- ▶ None of the given options
- ▶ Remain constant.
- ▶ can be changed by some operation

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

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Assignment operator is -----associative.

- ▶ right
- ▶ left
- ▶ binary
- ▶ unary

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

---

When ever dynamic memory allocation is made in C/C++, it is freed\_\_\_\_\_.

- ▶ Explicitly
- ▶ Implicitly
- ▶ Both explicitly and implicitly
- ▶ None of the given options

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

---

The appropriate data type to store the number of rows and columns of the matrix is\_\_\_\_\_.

- ▶ float
- ▶ int
- ▶ char
- ▶ none of the given options.

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

---

Which of the following function do NOT initialize the chunk of memory to all zero?

- ▶ calloc() function
- ▶ Both malloc() and calloc()
- ▶ None of the above
- ▶ malloc() function

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

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The function free() returns back the allocated memory got through calloc and malloc to \_\_\_\_\_ .

- ▶ stack
- ▶ heap
- ▶ stack and heap
- ▶ None of the given options

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

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**width()** is member function of \_\_\_\_\_

- ▶ cin object
- ▶ cout object
- ▶ Both cin and cout object
- ▶ None of the given option

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

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Templates are not type safe.

- ▶ true
- ▶ false

**Question No: 26 ( 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

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

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Give the general syntax of class template.

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

---

What is a truth Table?

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

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What will be the output of following code, if user input a number **123**?

```
int input ;  
cin >> oct >> input;
```

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```
cout << hex << input ;
```

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

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What is principle of friendship in the context of functions and classes?

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

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What are the limitations of the friendship relation between classes?

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

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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: 33 ( Marks: 3 )**

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Define static variable. Also explain life time of static variable?

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

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Write a program which defines three variables of type double which store three different values including decimal points, using setprecision manipulators to print all these values with different number of digits after the decimal number.

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

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Let we have a class,

```
class String  
{
```

```
private:  
char buf[25];  
};
```

Write code for assignment (=) operator function which assign one String object to other object. Your code should also avoid self assignment

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

---

Read the given below code and explain what task is being performed by this function

```
Matrix :: Matrix ( int row , int col )  
{  
    numRows = row ;  
    numCols = col ;  
    elements = new ( double * ) [ numRows ] ;  
    for ( int i = 0 ; i < numRows ; i ++ )  
        {  
            elements [ i ] = new double [ numCols ] ;  
            for ( int j = 0 ; j < numCols ; j ++ )  
                elements [ i ] [ j ] = 0.0 ;  
        }  
}
```

Hint : This function belong to a matrix class, having  
Number of Rows = numRows  
Number of Columns = numCols