

Template class can not have static variables.

- ▶ True
- ▶ False

Overloaded new operator function takes parameter of type `size_t` and returns

- ▶ void (nothing)
- ▶ void pointer
- ▶ object pointer
- ▶ int pointer

The second parameter of operator functions for `<<` and `>>` are objects of the class for which we are overloading these operators.

- ▶ True
- ▶ False

C++ is a case-sensitive language

- ▶ True
- ▶ False

If most significant bit of un-signed number is 1 then it represents a positive number.

- ▶ True
- ▶ False

If there is a symbol (`&` sign) used with the variable name followed by data type then it refers to _____ and if `&` is being used with variable name then it refers to _____.

- ▶ Address of variable, reference variable
- ▶ Reference variable, value of variable
- ▶ **Reference variable, address of variable**
- ▶ Address of variable, value of variable

When an object of a class is defined inside another class then,

- ▶ **Destructor of enclosing class will be called first**
- ▶ Destructor of inner object will be called first
- ▶ Constructor and Destructor will be called simultaneously
- ▶ None of the given options

It is possible to define a class within another class.

- ▶ **True**
- ▶ False

New and Delete are also used with _____ and data types as well.

- ▶ **Class, Objects**
- ▶ Structures, Pointers
- ▶ Both Class and structures
- ▶ None of above

With New keyword, data types and class members are initialized with meaningful values instead of garbage.

- ▶ **True**
- ▶ False

To include code from the library in the program, such as `iostream`, a directive would be called up using this command.

- ▶ `#include "iostream.h"`
- ▶ `include`
- ▶ `include`
- ▶ **`#include`**

A template function must have only generic data types.

- ▶ True
- ▶ **False**

New and Delete are also used with _____ and data types as well.

- ▶ **Class, Objects**
- ▶ Structures, Pointers
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- ▶ None of above

Which of the following is NOT a preprocessor directive?

- ▶ `#error`
- ▶ `#define`
- ▶ `#line`
- ▶ **`#undef`**

We can also do conditional compilation with preprocessor directives.

- ▶ **True**
- ▶ False

The default value of a parameter can be provided inside the

- ▶ function prototype
- ▶ function definition
- ▶ both function prototype or function definition
- ▶ none of the given options.

The return type of operator function must always be void.

- ▶ True
- ▶ False

What does (*this) represents?

- ▶ The current function of the class
- ▶ The current pointer of the class
- ▶ The current object of the class
- ▶ A value of the data member

The statement `cin.get ();` is used to,

- ▶ Read a string from keyboard
- ▶ Read a character from keyboard
- ▶ Read a string from file
- ▶ Read a character from file

When we do dynamic memory allocation in the constructor of a class, then it is necessary to provide a destructor.

- ▶ True
- ▶ False

What does $5 \wedge 6$, evaluate to in decimal where '^' is Exclusive OR operator?

- ▶ 1
- ▶ 2
- ▶ 3
- ▶ 4

What will be the correct syntax to access the value of fourth element of an array using pointer ptr?

- ▶ ptr[3]
- ▶ (ptr+3)
- ▶ *(ptr+3)
- ▶ Both 1 and 3

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Classes defined inside other classes are called ____ classes.

- ▶ looped
- ▶ **nested**
- ▶ overloaded
- ▶ none of the given options.

What purpose do classes serve?

- ▶ Data encapsulation
- ▶ Providing a convenient way of modeling real-world objects
- ▶ Simplifying code reuse
- ▶ **All of the given options**

Every class contains _____.

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

New operator is used to allocate memory from the free store during

- ▶ Compile Time
- ▶ **Run Time**
- ▶ Link Time
- ▶ None of the given options

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- ▶ True
- ▶ False

If constructor contains a return statement in its body then compiler will give

- ▶ No error
- ▶ Syntax error
- ▶ Logical error
- ▶ Run time error

Which of the following data type(s) can operate on modulus operator '%'?

- ▶ float, int
- ▶ float, double
- ▶ int
- ▶ char

Array is passed by value to a function by default.

- ▶ True
- ▶ False

We can use New keyword inside of Class Constructor.

- ▶ True

▶ False

When an operator function is define as member function for a Unary operator then the number of argument it take is/are,

▶ Zero

▶ One

▶ Two

▶ N arguments

With New keyword, data types and class members are initialized with meaningful values instead of garbage.

▶ True

▶ False

To access the data members of structure _____ is used.

▶ dot operator (.)

▶ * operator

▶ à operator

▶ None of given.

What will be the correct syntax to assign an array named arr of 5 elements to a pointer ptr?

▶ *ptr = arr ;

▶ ptr = arr ;

▶ *ptr = arr[5] ;

▶ ptr = arr[5] ;

*.doc is _____ by type.

- ▶ Sequential File
- ▶ **Random Access File**
- ▶ Data File
- ▶ Record File

The declarator of Plus (+) member operator function is

- ▶ **Class-Name operator + (Class-Name rhs)**
- ▶ operator Class-Name + ()
- ▶ operator Class-Name + (rhs)
- ▶ Class-Name operator + ()

Friend function of a class is _____.

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

Which of the following is true for the C++ statement given below? `int &ref = val`

;

- ▶ It creates a synonym for variable 'val'
- ▶ It creates an alias for variable 'val'
- ▶ It's a new name for variable 'val'
- ▶ **All of the given options**

We can also create an array of user define data type.

▶ True

▶ False

What is the sequence of event(s) when deallocating memory using delete operator?

▶ Only block of memory is deallocated for objects

▶ Only destructor is called for objects

▶ Memory is deallocated first before calling destructor

▶ Destructor is called first before deallocating memory

Deleting an array of objects without specifying [] brackets may lead to memory leak

▶ True

▶ False

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

▶ True

▶ False

What will be the correct syntax to initialize all elements of two-dimensional array to value 0?

▶ `int arr[2][3] = {0,0} ;`

▶ `int arr[2][3] = {{0},{0}} ;`

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Which of the following is NOT a preprocessor directive?

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- ▶ #define
- ▶ #line
- ▶ #undef

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When an operator function is define as member function then operand on the left side of operator must be an object.

- ▶ True
- ▶ False

break statement can be used outside a loop or switch statement.

- ▶ True
- ▶ False

The keyword _____ is used to return some value from a function.

- ▶ return
- ▶ break
- ▶ continue
- ▶ goto

Every data member or function inside the structure is _____ by default whereas everything declared inside a class is _____ by default.

- ▶ private, public
- ▶ public, private
- ▶ private, protected
- ▶ public, protected

If overloaded plus operator is implemented as non-member function then which of the following statement will be true for the statement given below? `obj3 = obj1 + obj2 ;`

- ▶ obj2 will be passed as an argument to + operator whereas obj1 will drive the + operator
- ▶ obj1 will drive the + operator whereas obj2 will be passed as an argument to + operator
- ▶ Both objects (obj1, obj2) will be passed as arguments to the + operator

- ▶ Any of the objects (obj1, obj2) can drive the + operator

Unary operator implemented as member function takes ____ arguments whereas non-member function takes ____ arguments.

- ▶ One, zero
- ▶ Zero, one
- ▶ One, two
- ▶ Two, one

The input/output streams cin and cout are _____ therefore have _____.

- ▶ Structures, function
- ▶ Objects, member functions
- ▶ Functions, objects
- ▶ None of the given options

If a symbolic constant has been defined, it will be an error to define it again.

- ▶ True
- ▶ False

Every class contains _____.

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

new and delete keywords are _____ in C++ language.

- ▶ Built-in- Function

- ▶ Operators
- ▶ **Memory Allocation Function**
- ▶ None of the given options

Consider the following code segment.

```
class M {  
public:  
M &operator+(const M &);  
...  
};  
p + q //code of line implies that p.operator+(q)  
...
```

Let assume if p and q are class objects then function is implemented as _____

- ▶ **Member function**
- ▶ Non-member function
- ▶ Friend function
- ▶ None of the given options

Assignment operator is -----associative.

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

Static variable which is defined in a function is initialized _____.

- ▶ **Only once during its life time**
- ▶ Every time the function call
- ▶ Compile time of the program
- ▶ None of the above

We can not define a variable of user-defined data type in the class.

- ▶ True
- ▶ **False**

We can also do conditional compilation with preprocessor directives.

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- ▶ **Run Time**
- ▶ Link Time
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A constructor that will create a new object with a full copy of the other object, is copy is known as _____

- ▶ **deep copy**
- ▶ shallow copy
- ▶ constructor copy
- ▶ none of the options

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- ▶ **False**

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- ▶ *ptr = arr ;
- ▶ **ptr = arr ;**
- ▶ *ptr = arr[5] ;
- ▶ ptr = arr[5] ;

What will be the correct syntax to access the value of fourth element of an array using pointer ptr?

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- ▶ (ptr+3)
- ▶ *(ptr+3)
- ▶ **Both 1 and 3**

Questions:

- What are manipulators? Give one example.
- Write down piece of code that will declare a matrix of 3x3. And initialize all its locations with 0;

- Which one (copy constructor or assignment operator) will be called in each of the following code segment?

- 1) Matrix m1 (m2);
- 2) Matrix m1, m2; m1 = m2;
- 3) Matrix m1 = m2;

- Identify the errors in the following member operator function and also correct them.

```
math * operator(math m);  
math * operator (math m)  
{  
    math temp;  
    temp.number= number * number;  
    return number;  
}
```

- 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.
- What are the advantages and disadvantages of using templates?

- What is the use of reference data type?
- What are the main types of operators in terms of number of arguments they take?
- What is the this pointer? Give an example of its use
- What are manipulators? Give one example.
- What will be the output of following functions if we call these functions three times?

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

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

- If the requested memory is not available in the system then what does calloc/malloc and new operator return?
- If we want to send the data by reference and don't want that original data should be affected then what can we do to prevent any change?

- Write a C++ program that contains a class 'myClass' having two data members of type int.

The class must have

- i). A default constructor which must initialize all the data members to their meaningful values.
- ii). A destructor with no implementation.
- lii). Setter member functions to set all data members of class
- iv). Getter member functions to get all data members of class

- Identify and correct the error in the following code:

```
if ( num % 2 = 0 )  
    cout << "The number is even" << endl;
```

- Write the code of a main() function which takes command-line arguments and returns an integer type value.
- new and delete operators are used for which purpose?
- Write a function named Sum which takes an integer as its argument and uses a static integer variable to keep track of the sum of all values passed to it during the running of a program.
- Consider the following code segment. What will be the output of the following code segment?

```
class class1{  
    public:  
    class class2{
```

```
public:
class2(){
cout << "Calling default constructor of class2\n" ;
}
};
class1(){
cout << "Calling default constructor of class1\n" ;
}
};
main(){
class1::class2 obj1;
class1 obj2 ;
}
```

- What will happen if we use an automatic variable in recursive function calls?
- How can we initialize an object which is declared as constant data member in another class ?
- Write a program which defines two variables var1 and var2 of type int which store two different values and print the values of these variable in three different system (Octal, hexadecimal, decimal) using manipulators setbase().

- Write a program which defines a Template function named Add () which adds two variables and then returns the sum. Define two variables of type int in main function, and then call Add () function on these variables.

Program output should look like this:

Enter two integer values to be added

Enter First value:

12

Enter Second value:

25

- How many arguments a Unary Operator take? Can we make a binary operator as unary operator?
- Write a program which defines two strings "Hello" and "Pakistan", merges both the strings using string manipulation function and displays on the screen.
- Why do java consider pointer as dangerous
- What is memory leak?
- What does optimization the of code means?
- What is the difference between structure and class?
- How do we provide the default values of function parameters?
- Why do java consider pointer as dangerous
- Mention the use of reference data type?
- Which arithmetic operators cannot have a floating point operand?

- What are manipulators? Give one example.
- What will be the output of following function if we call this function by passing int 5?

```
template T reciprocal(T x) {return (1/x); }
```

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