

DB-116

December-2013

5 Years M.Sc. (CA & IT) Integrated (K.S.) 3rd Sem. SY M.Sc.**OBJECT ORIENTED PROGRAMMING WITH C++****Time : 3 Hours]****[Max. Marks :100**

- I. Answer the following questions : (any **four**) **20**
- (1) Explain static data member and static member function in detail with code.
 - (2) What is file ? List the different ways to open the file and also explain the various file mode options.
 - (3) What is containership ? How does it differ from inheritance ?
 - (4) Explain explicit and mutable in detail with code.
 - (5) Explain main concepts of object-oriented programming.
2. (A) Do as directed : **10**
- (1) Which of the following is not a type of casting operator in C++ ?
 - (a) static-cast
 - (b) dynamic-cast
 - (c) interpret-cast
 - (d) const-cast
 - (2) Which of the following feature is not supported in C++ ?
 - (a) Inheritance
 - (b) Abstraction
 - (c) Reflection
 - (d) Late binding
 - (3) Which of the following is the correct syntax for releasing the array created with new operator as shown : ptr = new int [5]
 - (a) delete ptr;
 - (b) delete ptr [];
 - (c) delete [] ptr;
 - (d) delete ptr [5];
 - (4) New and delete operators are also known as _____ operators.
 - (5) Wchar-t data type hold _____ bytes wide characters.
 - (6) In line function is a command to the compiler.
[State True/False with reason).
 - (7) Destructors can be overloaded.
[State True/False with reason).
 - (8) A pointer to a derived class can be made to point to object of base class.
[State True/False with reason).
 - (9) Void display (int P=10, Float F; char C = 'A'); is a valid function prototype
[State True/False with reason)
 - (10) Const member function can access const data-member only (state True/False with reason).

(B) Specify the output for the following code :

```
(1)  Void main ( )
    {
        cout.setF (ios :: internal, ios :: adjustfield);
        cout.setF (ios :: show point);
        cout.setF (ios :: show pos);
        cout.width (15);
        cout.Fill (*);
        cout << 123.45;
    }

(2)  Void main ( )
    {
        int sum = 10;
        int & tot = sum;
        cout << tot;
        sum =1 5;
        cout << tot;
    }

(3)  Void main ( )
    {
        string s1("except");
        string s2("expect");
        int 9 - S1. compare (0, 2, S2, 0, 2);
        cout << I;
    }

(4)  Void test (int x)
    {
        .try
        }
        if (x == 0)
            throw 'x';
        if (x == 1)
            throw x;
        if (x == 2)
            throw "hello";
        cout << "All the Best";
    }
    catch (char)
    {
        cout << "caught char";
    }
    catch (...)
    {
        cout << "caught All";
    }
}

Void main ( )
{
    test (0);
    test (1);
    test (3);
}
}
```

```

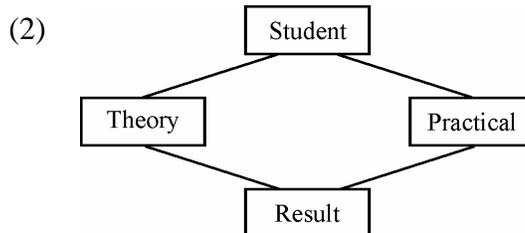
(5) Class A
{
    Public :
    Void display()
    {
        cout << "Hello I am A";
    }
};
class B: Public A
{
    Public :
    Void display ()
    {
        cout << "Hello I am B";
    }
};
Void main ()
{
    A *ptr, a1;
    B b1;
    ptr = & a1;
    ptr → display ();
    ptr = & b1;
    ptr → display ();
}

```

3. (A) Attempt any one :

8

- (1) Design two classes Rupee and Dollar. Rupee class has a data-member rs and Dollar class has a data-members usd. Implement type-conversion function for converting Dollar to Rupee. Write a C++ program to implement this (Approximately 1 Dollar = 62 Rs.)



The data-member of the classes are as follows :

Class	Data – Member
Theory	Sub1 (int), Sub2 (int)
Student	rnu (int)
Practical	Score (int)
Result	total (int)

Write a C++ program to test the above inheritance.

- (B) Differentiate between (any **four**) : **12**
- (1) Getline() – Write ()
 - (2) Dynamic binding – Static binding
 - (3) Operator overloading – Function overloading
 - (4) Single Inheritance – Multiple inheritance
 - (5) Class template – Function template
4. Attempt any **ten** : **20**
- (1) Explain ‘this’ pointer with code.
 - (2) In which case we are using casting operator function. List out all the features of it.
 - (3) Explain the functionality of seekg() and tellg() with their parameter.
 - (4) List out the rules of virtual function.
 - (5) Explain new and delete operator.
 - (6) What is the difference between synchronous and asynchronous exception.
 - (7) Explain insert () and erase () with code.
 - (8) What are the advantages of OOP over POP ?
 - (9) In which cases inline function may not work.
 - (10) List down the characteristics of Friend Function.
 - (11) What is the major difference between manipulator and IOS function ?
 - (12) Explain arg c and arg v.
5. (A) Attempt **all** : **5**
- (1) Give full form of RTTI.
 - (2) List out the operators in which friend function cannot be used for overloading.
 - (3) What is pure virtual function ?
 - (4) List out error handling function in file.
 - (5) Class A : Public B, Virtual Public C, Public D what is the order of execution of constructor ?
- (B) Write q C++ program for file handling in which write some First name in “First” File and some last name in “last” File. Read both the Files simultaneously and display the contents of both the Files on screen. **7**
- (C) Write a note on : **8**
- (1) namespace.
 - (2) userdefine manipulator.