

2014

(4th Semester)

BACHELOR OF COMPUTER APPLICATIONS

Course No. : 401

(Object-oriented Programming in C++)

(PART : A—OBJECTIVE)

(Marks : 25)

The figures in the margin indicate full marks for the questions

SECTION—I

(Marks : 15)

1. Choose the correct alternative by putting a
Tick (✓) mark in the brackets provided : 1×10=10

(a) Which of the following is not the member of
class?

(i) Static function ()

(ii) Friend function ()

(iii) Const function ()

(iv) Virtual function ()

(b) Consider the following statements :

```
char *ptr; ptr="hello"; cout<<*ptr;
```

What will be printed?

- (i) First letter ()
- (ii) Last letter ()
- (iii) Entire string ()
- (iv) Syntax error ()

(c) In C++, it allows compiler to insert arguments in a function call if it is not specified

- (i) call by value ()
- (ii) call by reference ()
- (iii) default constructors ()
- (iv) default arguments ()

(d) Which one of the following the compiler checks the type of reference in the object and not the type of object?

- (i) Abstraction ()
- (ii) Inheritance ()
- (iii) Polymorphism ()
- (iv) Encapsulation ()

(3)

(e) Which of the following functions is performed by a constructor?

- (i) Construct a new class ()
- (ii) Construct a new object ()
- (iii) Construct a new function ()
- (iv) Initialize object ()

(f) Consider the following statements :

`int x=22, y=15; x=(x>y)? (x+y) : (x-y);`

What will be the value of x after executing these statements?

- (i) 22 ()
- (ii) 7 ()
- (iii) 37 ()
- (iv) Error cannot be executed ()

(g) Which of the following is legal to access a class data member using **this** pointer?

- (i) `*(this).x` ()
- (ii) `this.x` ()
- (iii) `*this.x` ()
- (iv) `*(this.x)` ()

(h) Which of the following operators cannot be overloaded?

(i) [] ()

(ii) -> ()

(iii) * ()

(iv) ?: ()

(i) Which inheritance type is used in the class given, class A : public X, public Y?

(i) Multilevel inheritance ()

(ii) Hybrid inheritance ()

(iii) Multiple inheritance ()

(iv) Hierarchical inheritance ()

(j) Which one of the following is the correct way to declare a pure virtual function?

(i) virtual void Display(void){0}; ()

(ii) virtual void Display = 0; ()

(iii) virtual void Display(void) = 0; ()

(iv) void Display(void) = 0; ()

(5)

2. State whether the following statements are *True (T)* or *False (F)* by putting a Tick (✓) mark : 1×5=5

(a) To use either an input or output file, the program must include the **fstream.h**.

(T / F)

(b) When an exception is not caught, the program is aborted.

(T / F)

(c) We can have virtual constructors but not virtual destructors.

(T / F)

(d) The **#ifndef** directive tests to see whether a class has been defined.

(T / F)

(e) There are any numbers of instances of an abstract class can be created.

(T / F)

(6)

SECTION—II

(Marks : 10)

3. Answer the following questions : 2×5=10

- (a) What is an abstract class? When do we make a class virtual?

(7)

- (b) What is **this** pointer? What would be the output of the following?

```
#include<iostream.h>
void main( )
{
    char *ptr="abcd";
    char ch;
    ch = ++*ptr++;
    cout<<ch;
}
```

(c) What will be the output of the following program code?

```
class a
{
    a()
    {
        cout<<"constructor a";
    }
    ~a()
    {
        cout<<"destructor a";
    }
};
class b : public a
{
    b()
    {
        cout<<"constructor b";
    }
    ~b()
    {
        cout<<"destructor b";
    }
};
void main()
{
    b b1;
}
```


(10)

(d) Write the error handling functions in C++.

(11)

(e) What is a stream? What are the C++ stream classes?

IV/BCA/401

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BACHELOR OF COMPUTER APPLICATIONS

Course No. : 401

(Object-oriented Programming in C++)

Full Marks : 75

Time : 3 hours

(PART : B—DESCRIPTIVE)

(Marks : 50)

*The figures in the margin indicate full marks
for the questions*

1. (a) What is OOP? How is it different from the
procedure-oriented program? 4
- (b) Explain the following terms : 6
 - (i) Encapsulation
 - (ii) Inheritance
 - (iii) Polymorphism

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(Turn Over)

(2)

Or

- (c) What is a class? Explain the general form of class declaration. 4
- (d) Explain the following terms : 6
- (i) Namespace
 - (ii) Scope resolution operator
 - (iii) Reference variable
2. (a) Explain the concept of function overloading. 3
- (b) Write a C++ program to illustrate the use of objects as function argument. 7
- Or
- (c) Write a C++ program to illustrate the use of overloaded constructors. 7
- (d) Write the characteristics of static data member. 3
3. (a) What is copy constructor? 2
- (b) Write a C++ program to overload the operator '+' for complex numbers. 8
- Or
- (c) What is friend function? 2
- (d) Write a C++ program to illustrate the run-time polymorphism. 8

4. (a) Write a C++ program to prepare the mark sheet of a university examination with the following items from the keyboard :
- Name of the student, Roll no.,
Subject name, Subject code,
Internal marks, External marks
- Design a base class consisting of data members—Name of the student and Roll no. The derived class consists of the data members—Subject name, Subject code, Internal marks and External marks. 6
- (b) Write a C++ program for implementation of pointers and strings. 4
- Or
- (c) Write a C++ program for implementation of arrays of pointers. 4
- (d) What is virtual function? Explain with an example. 6
5. (a) What is a template class? Write a general format of a function template. 4
- (b) What is input and output stream? Explain the command line arguments. 6
- Or
- (c) What is exception? Write the types of exception. How is it handled in C++? 6
- (d) Describe the various error handling functions in file operations. 4
