



MAT-003-003309

Seat No. _____

B. C. A. (Sem. III) (CBCS) Examination

October / November - 2016

CS - 14 : C++ & Object Oriented Programming

(New Course)

Faculty Code : 003

Subject Code : 003309

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

1 Answer the following questions : 20

- (1) What are the C++ stream classes ?
- (2) What are the modes of files used in file program ?
- (3) What will be output of following program ?

```
#include <iostream.h>
```

```
int main ()
```

```
{
```

```
int a;
```

```
a = 5 + 3 * 5;
```

```
cout << a;
```

```
return 0;
```

```
}
```

- (4) Explain static member function.
- (5) What is copy constructor ?
- (6) Discuss any three features of object oriented programming.
- (7) Which method is used to convert basic to class type conversation ?
- (8) Explain inline function.

(9) What will be output of following code ?

```
#include <iostream>
class Base
{
    Public :
    virtual void show ()
    {
        cout <<"In Base \n" ;
    }
}
Class Derived : public Base
{
    Public
    void show ()
    {
        cout << "Inderived \n";
    }
};
int main ()
{
    Base * b = new Derived;
    b → show (); //RUN-TIME POLYMORPHISM
    return 0;
}
```

- (10) How protected keyword is useful ?
- (11) What is destructor ? How many destructors can be declared in programming ?
- (12) How can we access private member function of the class ?
- (13) How overloading of template function occurs ?
- (14) Is it possible to declare constructor as a virtual function ? Explain with reason.
- (15) What is hybrid inheritance ?
- (16) Explain any three differences between C and C++.
- (17) What are C++ tokens ? List out them.
- (18) What is difference between Object and Class ?
- (19) Give an example of polymorphism.
- (20) How to inherit a base class to child class ? Explain with syntax.

- 2 (a) Give answers of the following : (any three) 6
- (1) What is nested class ? Explain with proper example.
 - (2) What is abstract class ?
 - (3) Describe the structure of C++ program.
 - (4) What is command line arguments in C++ ?
 - (5) What are the Memory Management Operators ? Explain in detail.
 - (6) Explain difference between Static and Constant keyword.
- (b) Give answers of the following : (any three) 9
- (1) Discuss in detail about object oriented paradigm.
 - (2) Explain array of object with example.
 - (3) What is exception handling ?
 - (4) Discuss in detail about operator overloading in C++.
 - (5) What are the unformatted and formatted I/O operations ?
 - (6) Explain in detail about STL.
- (c) Give answers of the following : (any two) 10
- (1) What is pointer in C++ ? Explain "this" pointer with example.
 - (2) Explain friend function with suitable example.
 - (3) What is inheritance ? Discuss the types of inheritance.
 - (4) Write function Max () that accepts three arguments. Overload this function to achieve following task.
 - (a) To display the greater number among passed numbers.
 - (b) To display the largest string among the passed string.
 - (5) Design and implement the inheritance hierarchy of students. There are two types; one who are given scholarship and others who are not. A student who receive scholarship dos not have to pay the fee except hostel charges, if they are staying in hostel. Your design should include necessary functions and constructors/destructors. Write C++ code.

- 3 (a) Give answers of the following : (any three) 6
- (1) What is call by reference ?
 - (2) Explain the use of scope resolution operator ?
 - (3) What are nesting of functions ?
 - (4) What are Operators in C++ ? Explain scope resolution operator.
 - (5) What is function overloading and overriding ?
 - (6) Explain rules for operator overloading.
- (b) Answer the following : (any three) 9
- (1) What is Virtual Base Class ? Explain with example.
 - (2) What are the access specifiers ?
 - (3) What is basic data type in C++ ?
 - (4) Explain control structures in C++ programming.
 - (5) Discuss in detail about characteristics of constructor.
 - (6) What is Virtual and pure virtual function ?
- (c) Answer the following : (any two) 10
- (1) With the use of friend function, calculate average of two numbers from two different classes. Write necessary functions and constructors also.
 - (2) What is dynamic initialization of objects in C++ ? Explain with example.
 - (3) Write C++ code that illustrates binary operator overloading as friend function.
 - (4) Write a program that has class rupees which accepts currency as rupees and paise which are integer values from multiple objects.
 - (1) Calculate total Rs. and Paise by overloading operator.
 - (2) Use default constructor and constructor with arguments also.
 - (5) How to use file pointers in C++ ? Explain with example.