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 overcoding 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.
