

KADI SARVA VISHWAVIDYALAYA**B.E. Semester : 3****Subject Code: CE/IT – 306****CE/IT****Subject Name: Object Oriented
Programming with C++****Total Marks : 70****Date : 30/12/2016****Time : 10:30 a.m. to 01:30 p.m.**

- Instructions:
- 1) All questions are compulsory.
 - 2) Figures to the right indicate full marks.
 - 3) Indicate clearly, the options you attempt along with its respective question number.
 - 4) Use the last page of main supplementary for rough work.

Section – 1**Marks**

Q.1 (A) Explain Static Data Member and Static Member Function with their special Characteristics. Also write a suitable programming example. [5]

(B) Explain call by reference and return by reference with suitable example. [5]

(C) Explain with examples the uses of user define data types. [5]

OR

(C) Explain the use of destructor in C++. Discuss its features. [5]

Q.2 (A) Define following terms in C++ with suitable examples. [5]

(1) copy constructor (2) this pointer

(3) Function Overloading (4) new and delete keyword

(B) Define a class complex with real and imaginary as two data member with default & parameterized constructors function to initialize and display data of class. It should overload the + operator to add two complex objects. Write a complete C++ program to demonstrate use of complex class. [5]

OR

Q.2 (A) What is Constructor? Which are the special characteristics of constructor functions? What is the need of “do-nothing” implicit constructor? When the destructor function invoked? [5]

(B) Create a class Account. It has three data member account id, name and balance. Define function to assign value and display value. Define function that search account number given by the user. If account number exists, print detail of that account. Write a program using array of object. Declare at least 5 account and print details. [5]

Q.3 (A) Explain the type conversion from basic type to class type and from class type to basic type with suitable example. [5]

(B) Write C++ program to overload the == operator to compare two strings. [5]

OR

Q.3 (A) Explain Function : seekp(), tellg() [5]

(B) What is Exception? Explain Exception Handling Mechanism. Write a program that demonstrates use of multiple catch. Add at least three catch block in your Program [5]

Section – 2

- Q.4** (A) Explain with the help of an example why templates are used in programming. [5]
(B) Difference between Compile time polymorphism and Runtime Polymorphism. [5]
(C) Explain Runtime polymorphism. Explain and demonstrate, how virtual function to achieve runtime polymorphism? [5]

OR

- (C) Explain function Overriding with an example. [5]
- Q.5** (A) Attempt any Two.
(1) List error handling file functions in C++
(2) Protected Data Members
(3) Define Friend Function
(B) Explain Importance of Inheritance. List its types and explain anyone with an example. [5]

OR

- Q.5** (A) Explain File Pointers and functions for their manipulation. [5]
(B) What is difference between opening a file with a constructor function and opening a file with open() function? When is one method preferred over the other? [5]
- Q.6** (A) Write a program in C++ to generate Fibonacci Series by using recursion. [5]
(B) Explain the use of virtual base class with example. [5]

OR

- Q.6** (A) Define Operator overloading. Create class Time that has three data members hour, minute and second and two constructor, default constructor and parameterized constructor to initialize data member. Write a program to add two times by overloading operator +.
(B) What is Reference variable? What is its major use? Give Example. [5]

KADI SARVA VISHWAVIDHYALAYA

B.E.(C.E/I.T) Semester-III APRIL/MAY 2014

Subject Code:-CE/IT 306

Subject name:-Object Oriented Programming with C++

Date:- 02/05/2014

Time:-10:30 am to 01:30 pm

Total Marks:-70

Instructions:

1. Answer each section in separate Answer sheet.
2. Use of Scientific Calculator is permitted.
3. All questions are **Compulsory**.
4. Indicate **Clearly**, the options you attempt along with its respective question number.
5. Use the last page of main supplementary of **rough work**.

Section-I

Q-1 (All compulsory)

- (A) List the tokens used in C++ Programming language. [5]
(B) Explain Constructor with example. [5]
(C) Using friend function convert degrees to arc minutes. (1 degree = 60 arc minutes) [5]

OR

- (C) Using constructors make a database of three students with their enrollment number, name, address, Phone no and desired field of study. (use appropriate data types) [5]

Q-2 Answer the following Questions.

- (A) Write advantages of C++ over C. [5]
(B) Describe abstraction with respect to OOP. [5]

OR

- (A) What is Virtual class and Friend class? Differentiate if necessary [5]
(B) Differentiate between classes and structures. [5]

Q-3 Answer the following Questions.

- (A) Write a program to overload the unary operator “-”(Minus) [5]
(B) Explain Polymorphism. [5]

OR

- (A) Write a program to demonstrate function overriding. [5]
(B) Explain inline function. [5]

Section-II

Q-4 (All compulsory)

- (A) What is abstract class? How many instances of abstract class can be [5] created?
- (B) Explain "public", "private", and "protected". [5]
- (C) Write a C++ program to sort 10 numbers in an array [5]

OR

- (C) Write a C++ program to demonstrate constructor overloading [5]

Q-5 Answer the following Questions.

- (A) Explain pointer to objects with example [5]
- (B) Explain how to open or close a file using C++. [5]

OR

- (A) Write a program to demonstrate difference between variables and pointers [5]
- (B) Write about the use of different modes to open a file using C++ [5]

Q-6 Answer the following Questions.

- (A) What is the meaning of static in C++ [5]
- (B) Write a program to demonstrate implicit type conversion [5]

OR

- (A) Write about exception handling in C++ [5]
- (B) Write a program to print contents of a given file. (Assume location of file as C:\TEST) [5]

KADI SARVA VISHWAVIDYALAYA

B.E. Semester - III (CE and IT) EXAMINATION Nov-Dec-2013

Subject Code CE306

Date : 29/11/13 Time 3 Hrs.

Subject: Object Oriented Programming with C++

Total Mark :70

- Q.1 (a) Give the difference between object oriented language and procedure oriented language. [5]
(b) Define Object And Class. [5]
(c) Create a class rectangle and write program in C++ to print area of rectangle [5]
Or
(c) Write a C++ program that will ask for a temperature in Fahrenheit and display it in Celsius using a class called temp and member functions. e.q. $(^{\circ}\text{F} - 32) / 1.8$ [5]
- Q.2 (a) Explain various type of Access modifier in C++. [5]
(b) Explain "Pass by value "and "Pass by reference. [5]
Or
(a) Explain if.. else and switch –case statement . [5]
(b) Explain Function overloading with Example. [5]
- Q.3 (a) Explain the difference between overloaded and overridden functions. [5]
(b) List out various operator in C++ [5]
Or
(a) Differentiate between classes and structures. [5]
(b) What is operation overriding? Discuss the reasons for override [5]
- Q.4 (a) Describe is Virtual Class and Friend class? Differentiate if necessary [5]
(b) Describe inline function in C++ with example [5]
(c) What is Friend function? Explain with example. [5]
Or
(c) WAP to check whether a number is even or odd
- Q.5 (a) What is type conversion? Explain the type conversion from basic type to class type and from class type to basic type with proper example. [5]
(b) What are the differences between new and malloc? [5]
Or
(a) What is a constructor? Explain types of constructor with example [5]
(b) What does inheritance mean in c++? What are different forms of inheritance? [5]
- Q.6 (a) WAP to display elements of an array [5]
(b) Explain Abstraction [5]
Or
(a) What is Pointer to object [5]
(b) Describe file Modes [5]

KADI SARVA VISHWAVIDHYALAYA

B.E. CE/IT Semester III Regular Examination-Nov-2014

Subject Code:- CE/IT 306

Subject Name:- Object Oriented Programming with C++

Date:-21/11/2014

Time:- 10.30 AM to 1.30 PM

Total Marks:- 70

Instructions:

1. Answer each section in separate Answer sheet.
2. Use of scientific calculator is permitted.
3. All questions are **Compulsory**.
4. Indicate **clearly**, the options you attempt along with its respective question number.
5. Use the last page of main supplementary of **rough work**.

Section – I

Q-1 **Answer the following questions.** (All compulsory)

- (A) Differentiate POP and OOP. [5]
(B) Describe data abstraction , encapsulation and polymorphism. [5]
(C) Differentiate call by reference and call by value with example [5]
- OR**
- (C) What is inline function ? Provide appropriate example. [5]

Q-2 **Answer the following questions.**

- (A) What is a friend function? Whar are the merits and demerits of using friend functions? [5]
(B) What is class ? How does it accomplish data hiding ? Give example. [5]

Q-2 **Answer the following questions.**

- (A) List all Access specifiers and explain it . [5]
(B) State whether the following statements are TRUE or FALSE [5]
1. Data item in a class must always be private.
 2. Functions cannot return class objects.
 3. Friend functions have access to only public members of a class.
 4. An entire class can be made a friend of another class.
 5. Data members can be initialized inside class specifiers.

Q-3 Answer the following questions.

- (A) Write C++ program to add two complex numbers using object as arguments. [5]
(B) Explain constructors and its all type with suitable example. [5]

OR

Q-3 Answer the following questions.

- (A) Create two classes DM and DB which store the value of distances. DM store distance in meters and centimeters and DB store in feet and inches. Write a program that can read values for the class objects and add one object of DM with another object of DB.
Use a friend function to carry out addition operation. The object that store the result may be a DM object or DB object, depending on the units in which the results are required.
Display should be in the format of feet and inches or meters and centimeters depending on the object on display.
- (B) Describe destructors with suitable program and its output [5]

Section – II

Q-4 Answer the following questions. (All compulsory)

- (A) What is an operator function ? Describe the syntax of an operator function. [5]
(B) What is conversion function ? How is it created ? Explain its syntax. [5]
(C) What is inheritance? Explain the syntax of it and list all types of inheritance [5]

OR

- (C) What is virtual function and how does it differ from pure virtual function. [5]

Q-5 Answer the following questions.

- (A) What is virtual base class ? Explain it with suitable program. [5]
(B) How is polymorphism achieved at compile time and run time ? [5]

OR

Q-5 Answer the following questions.

- (A) What is **this pointer**? Give suitable example. [5]
(B) What is hybrid inheritance ? Write suitable program of it. [5]

Q-6 Answer the following questions.

- (A) WAP to implement overloading of Binary Operator. [5]
(B) Enter a class including the following members : [5]

- 1) hour
2) minute

Member functions :

- 1) to get the time
- 2) to display the time
- 3) to add the two objects of the class

OR

Q-6 Answer the following questions.

- (A) WAP to overload unary operator. [5]
(B) WAP to implement multiple inheritance. [5]

KADI SARVA VISHWAVIDYALAYA
B.E. SEMESTER - III EXAMINATION – NOVEMBER – 2015

Subject Code:-CE/IT – 306

Subject Name:- Object Oriented Programming with C++

Date:- 09/12/2015

Time:- 10:30 am – 01:30 pm

Total Marks:- 70

Instructions:

1. Answer each section in separate Answer sheet.
2. Use of scientific calculator is permitted.
3. All questions are **Compulsory**.
4. Indicate **clearly**, the options you attempt along with its respective question number.
5. Use the last page of main supplementary of **rough work**.

Section – I

Q-1 (All compulsory)

- (A) Explain with diagram object oriented programming paradigm. [5]
(B) Write down the output of following programs. [5]

```
#include <iostream.h>
int main()
{
    int num1 = 10;
    float num2 = 20;
    cout << sizeof(num1 + num2);
    return 0;
}
```

```
#include <iostream.h>
int main()
{
    float x = 100;
    float & sum = x;
    int & total = x;
    cout << x << "\n" << sum << "\n" << total;
}
```

- (C) Explain various benefits of object oriented programming. [5]
OR
(C) What is reference variable? Explain with examples. [5]

Q-2 Answer the following questions.

- (A) Describe various operators in C++. [5]
(B) Write a function using reference variables as arguments to swap the values of a pair of integers. [5]

OR

- (A) Explain various expressions and their types with examples. [5]
(B) Explain call by reference and return by reference with suitable example. [5]

PTO...

Q-3 Answer the following questions.

- (A) Explain inline function and its use with suitable example. In which situation inline function may not work? [5]
- (B) Create a class Account. It has three data member account id, name and balance. Define function to assign value and display value. Define function that search account number given by the user. If account number exists, print detail of that account. Write a program using array of object. Declare at least 5 account and print details. [5]

OR

- (A) Write a program using inline function to find largest of three numbers. [5]
- (B) Discuss the use of static data members and static member functions with examples. [5]

Section – II

Q-4 (All compulsory)

- (A) What is constructor? Explain Parameterized constructors with suitable example. [5]
- (B) Define copy constructor. Explain its significance. Under which condition is it invoked? Describe your answer with a C++ program. [5]
- (C) Explain friend function with suitable example. [5]

OR

- (C) Define a class matrix with an integer array of 3X3 as a data member. Define a friend function which adds two matrix objects and returns resultant matrix object. [5]

Q-5 Answer the following questions.

- (A) Define operator overloading? Explain how to overload unary operator and binary operator. [5]
- (B) What is Inheritance? What are the different visibility modes observed while deriving a class from a base class. Explain with examples. [5]

OR

- (A) Write a C++ program that overloads + operator to add two complex numbers. [5]
- (B) What are virtual base classes? Explain with example. [5]

Q-6 Answer the following questions.

- (A) Explain pointer to objects. What is this pointer? Write a program to illustrate the use of this pointer. [5]
- (B) What are virtual functions? Where are they needed? Are virtual functions inherited? Justify your answer with the help of an example. [5]

OR

- (A) What is stream? Describe various stream classes for console I/O operations. [5]
- (B) Explain file pointers and their manipulators with examples. [5]

----- All the Best -----