

KADI SARVA VISHWAVIDYALAYA

B.E. Semester II Examination

(May 2025)

Object Oriented Programming using “C++”

TIME: 10:00 am to 1:00 pm

Subject Code : CC 111 N

DATE: 30/05/2025

TOTAL MARKS: 70

Instructions:

- 1 Answer each section in separate answer sheet.
- 2 All questions are **Compulsory**.
- 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 –I

- Q-1 A** Describe and explain the basic structure of a C++ program. **5**
B List all the fundamental concepts of Object-Oriented Programming (OOP) and **5** explain any four in detail.
C List applications of OOP. Explain Input - Output statements in C++ with a **5** program

OR

- C** Which is better programming paradigm between POP and OOP? Explain with a **5** justification of your answer.

- Q-2 A** Differentiate between implicit and explicit type conversion in C++. Explain each **5** with a suitable program example.

- B** Write a C++ program to demonstrate the use of the scope resolution operator **5** (::).

OR

- A** What are manipulators? Name any four commonly used manipulators and **5** explain the functionality of any two of them in detail with examples.

- B** Explain the role of constructors in C++. Explain parameterized constructor with **5** a suitable program.

- Q-3A** How does a friend function differ from a member function? Discuss the **5** advantages of using a friend function.

- B** Explain the access specifiers. How do access specifier control access to class **5** members? Explain with a suitable program.

OR

- A** Explain Destructor with a program. State the characteristics of destructor. **5**

- B** How does the '**this**' pointer help in distinguishing between data members and **5** parameters with the same name?

SECTION - II

- Q-4 A Define Inheritance and explain types of inheritance. State the advantages of Inheritance. 5
B Demonstrate the concept of method overriding using a program example. 5
C What is the significance of a pure virtual function? How does it contribute to polymorphism and class design? 5

OR

- C What is the significance of dynamic binding in C++ for achieving runtime polymorphism? How does it differ from static binding? 5

- Q-5 A What is inline function? Write a program to add and subtract two given numbers using inline function 5
B Explain Unary and Binary Operator Overloading with an example. 5

OR

- A What is operator Overloading? Define a class complex with real and imaginary as two data member, add necessary constructors and member function to initialize and display data of class. Class should overload the = (assignment) operator. Invoke the statements like $C2=C1$.
B Explain Function overloading with an example.

- Q-6A Explain the significance of exception handling in C++. How does it improve program reliability? 5
B Explain the use of file stream classes with a program to read and write to a text file. 5

OR

- A How do templates support generic programming in C++? Write a function template to calculate the cube of values of different data types. 5
B What are I/O streams in C++? List and describe the standard stream classes for console I/O. 5

*****BEST OF LUCK*****

Seat. No. _____

KADI SARVA VISHWAVIDYALAYA

BE SEMESTER-II Examination May/June-2024

Subject Name: Object Oriented Programming using “C++”

Subject Code: CC-111-N

Date: 18/05/2024

Time: 12:00pm to 3:00pm

Total Marks: 70

Instructions:

1. Answer each section in separate answer sheet.
2. All questions are Compulsory.
3. Indicate clearly, the option you attempt along with its respective question number.
4. Use the last page of main supplementary of rough work.

Section-I

- Q-1** (A) Explain the declaration of pointer in C with example. [5]
(B) What is the difference between Procedure Oriented Programming and Object-Oriented programming? [5]
(C) Explain insertion and extraction operator with example in C++. [5]

OR

- (C) Distinguish between the following terms:
I. Data abstraction and data encapsulation
II. Inheritance and Polymorphism [5]

- Q-2** (A) List out and explain the manipulators used for formatted I/O operations with example. [5]

- (B) Explain Static data members and static member functions with example. [5]

OR

- Q-2** (A) Explain Access specifiers: public and private with example. [5]

- (B) List out various type conversion techniques? Explain basic to class type conversion with example. [5]

- Q-3** (A) Write a program to find the larger of two given numbers in two different classes using friend function. [5]

- (B) What is a constructor? Explain any two types of constructors with an appropriate example. [5]

OR

- Q-3** (A) Write a program to create a class TIME with members hours, minutes, and seconds. [5]
Read values from keyboard and add two TIME objects by passing objects to function and display result.

- (B) Explain inline function with example. [5]

Section-II

- Q-4** (A) List out types of inheritance and explain any two with example. [5]
(B) Explain overriding member function with example. [5]

- (C) Explain virtual function with example. [5]

OR

- (C) Demonstrate the concept of operator overloading with example [5]

- Q-5** (A) Explain scope resolution operator (`:`) with an example. [5]
(B) What is the meaning of Abstract Class? Explain it in detail. [5]

OR

- Q-5** (A) Explain 'this' pointer with example. [5]
(B) Explain Run time polymorphism with example. [5]

- Q-6** (A) What is exception handling? Explain how to handle an exception with appropriate example. [5]

- (B) Explain stream errors in detail. [5]

OR

- Q-6** (A) Explain class template. also write a C++ program for class template with multiple parameters. [5]
(B) Describe various stream classes for console I/O operations. [5]

OR

KADI SARVA VISHWAVIDHYALAYA

B.E. Semester II Examination

(Jan– 2024)

Object Oriented Programming using “C++”

Branch : CE/IT/EC

DATE: 03/01/2024

TIME: 12:00 pm to 3:00 pm

Subject Code : CC 111 N

TOTAL MARKS: 70

Instructions:

- 1 Answer each section in separate answer sheet.
- 2 All questions are **Compulsory**.
- 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 – I

- Q-1 A Define and explain data types: Structure and Pointer 5
B State the benefits of Object Oriented Programming (OOP) 5
C What are the difference between Procedure Oriented Programming and Object Oriented programming? 5
- OR**
- C Explain the basic building concepts of OOP. 5

- Q-2 A Define Type Conversion. Explain using different examples. 5
B Demonstrate the global scope and local scope using scope resolution operator in a program. 5
- OR**
- A List any 3 manipulators and explain in detail. 5
B What is the work of constructor in a program. State the types of Constructor and explain any 1 in detail using a program. 5

- Q-3A How to pass an object as an argument. Explain using a program. 5
B State the 3 the access specifiers of Inheritance and explain it in brief. 5
- OR**
- A Demonstrate the usage of destructor using a program 5
B What does ‘this’ keyword refer to? Explain with a program. 5

SECTION – II

- Q-4 A What is the meaning of Inheritance? State the advantages of using Inheritance concept in a program. 5
B Write a program having the demonstration of the *Method Overriding* concept. 5
C Explain concept of virtual functions with an example. 5
- OR**
- C What is the meaning of Abstract Class? Explain it in detail. 5

- Q-5 A Explain Dynamic Binding with a program. 5
B Explain the pitfalls of Operator Overloading. 5
- OR**

- A Define a class complex with real and imaginary as two data member, use necessary constructors and member function to initialize and display data of class. Class should overload the ‘-’ operator to subtract two complex objects and return the results. Invoke the statements like $C3=C1-C2$ in main () function. 5
B Explain the concept of function overloading by overloading 3 function in a program. 5

- Q-6A Explain Exception handling in detail. 5
B Explain stream classes and its hierarchy. 5
- OR**

- A Define Template. Write a program to define the function template for calculating the cube of given numbers with different data types. 5
B Explain stream errors in detail. 5

Seat. No. _____

KADI SARVA VISHWAVIDYALAYA
BE SEMESTER-II (New Course) Examination June 2023

Subject Name: OBJECT ORIENTED PROGRAMMING USING 'C++' **Subject Code: CC111-N**

Date: 20/06/2023

Time: 10:00am to 01:00pm

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 option you attempt along with its respective question number.
5. Use the last page of main supplementary of rough work.

Section-I

- Q-1** (A) i) How does main() function in C differ from C++? Give General format of Class. [5]
ii) what is reference variable in c++.
(B) Define pointer? Explain pointer and array with example. [5]
(C) Enlist and explain the basic characteristics of OOP in detail. [5]
- OR
- (C) Define a structure called "Student" that represents a student's information, including their name, ID, and marks for three subjects: Math, English, and Science. [5]
- Q-2** (A) Explain type conversion from class type to basic type and one class type to another class type with suitable example [5]
(B) What is function overloading? Illustrate with suitable example. [5]
- OR
- Q-2** (A) Define Terms: i) Object ii) Class iii) Destructor iv) Token [5]
v) Identifiers.
(B) Explain Access specifiers: public and private with example. [5]
- Q-3** (A) Explain inline function with suitable example [5]
(B) What is a constructor? Explain different types of constructors with an appropriate example. [5]
- OR
- Q-3** (A) What is friend Function? Explain the characteristics of friend function [5]
(B) Explain 'this' pointer' with example. [5]

P.T.O

Section-II

- Q-4** (A) Explain various forms of inheritance with diagrammatic illustrations. Also explain any one type of inheritance with an appropriate program. [5]
- (B) Explain call by value and call by reference with example. [5]
- (C) What is an operator Overloading? Write a program to overload binary '+' operator as a member function. [5]
- OR**
- (C) Explain overriding member function with example. [5]
- Q-5** (A) Describe abstract class with example [5]
- (B) Define virtual and pure virtual function with example. [5]
- OR**
- Q-5** (A) Explain Runtime polymorphism. Explain and demonstrate, how virtual function to achieve runtime polymorphism? [5]
- (B) Explain scope resolution operator (::) with an example. [5]
- Q-6** (A) Explain Function and Class Templates with appropriate example. [5]
- (B) What is an Exception? Demonstrate try...catch block With example. [5]
- OR**
- Q-6** (A) Describe various stream classes for console I/O operations. [5]
- (B) Write a C++ program to handle Exception "division by zero" situation [5]

Seat No. _____

KADI SARVA VISHWAVIDYALAYA
B.E. Semester-II Examination January -2023

SUBJECT CODE: CC111-N

SUBJECT NAME: Object Oriented Programming using C++

DATE: 23/01/2023

TIME: 10:00 am to 1:00 pm

TOTAL MARKS: 70

Instructions:

- 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 attempted along with its respective question number.
 5. Use the last page of main supplementary for rough work.

SECTION – 1

- Q-1.** a) Write a structure of C++ program and explain in brief. 5
b) Differentiate procedure oriented programming and object oriented programming. 5
c) Distinguish between the following terms:
 i) Data abstraction and Data encapsulation.
 ii) Dynamic binding and Message passing. 5

OR

- Q-2.**

 - c) Explain the basic concepts of OOPC and its advantages. 5
 - a) Explain scope resolution operator (::) with suitable example. 5
 - b) Define Class & Object. Write syntax for accessing a data member and member function of a class. Explain how to define and access member function inside the class with example. 5

OR

- Q-2.** a) What is use of access specifiers? Explain various types of access specifiers. 5
b) What is function overloading in C++? Write a program that overloads volume functions that return volume of cube, cuboids and cylinder. 5

- Q-3. a)** What is inline function? Write a program to find the area of the bigger circle using inline function. 5

- b) What is reference variable? Explain with suitable example. 5

OR

- Q-3.** a) What is friend function? What are advantages and disadvantages of friend function?
b) What is a constructor? Explain parameterized constructor with example.

SECTION – 2

- Q-4.** a) What is an operator Overloading? Write a program to overload Binary + operator as a member function. 5
b) Explain abstract class with example. 5
c) Explain the use of destructor in C++. Discuss its features. 5

OR

- c) Explain overridden function with example. 5

- Q-5.** a) Explain importance of inheritance. List its types and explain anyone with an example. 5
b) Difference between virtual and pure virtual function in C++. 5

OR

- Q-5.** a) Define virtual base class with example. 5
b) What is polymorphism in C++? Explain compile time and run time polymorphism? 5

- Q-6.** a) What are three keywords for exception handling? Explain these three keywords in details. 5
b) What is stream class? Describe various stream classes for console I/O operation. 5

OR

- Q-6.** a) Explain with the help of example why template are used in programming. 5
b) Explain file handling in C++. 5

*******BEST OF LUCK*******

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KADI SARVA VISHWAVIDYALAYA
B.E. Semester-II Examination (July -2022)

SUBJECT CODE: CC111-N

SUBJECT NAME: Object Oriented Programming using C++

DATE: 09/07/2022

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 attempted along with its respective question number.
5. Use the last page of main supplementary for rough work.

SECTION – 1

- Q-1.** a) Explain the difference between OOP and POP. 5
 b) Define Terms: i) Object ii) Class iii) Constant Variable iv) Token v) Identifiers. 5
 c) i) How does main() function in C differ from C++? Give General format of Class. 5
 ii) what is reference variable in c++. 5

OR

- c) Explain the basic concept of OOPC and its advantages. 5

- Q-2.** a) What is structure? Write a program in c using structure to enter rollno, marks of the three subject for 3 student and find total obtained by each student . 5
 b) i) Explain use of setw and endl manipulators. 5
 ii) Explain << and >> operator. 5

OR

- Q-2.** a) Explain function overloading. Write a program to calculate area of rectangle and triangle using function overloading. 5
 b) Explain scope resolution operator (::) with an example. 5

- Q-3.** a) What is Inline Function? Explain with an Example. 5
 b) Explain Access specifiers: public and private with example. 5

OR

- Q-3.** a) What is friend function? Write a program to find out sum of two private data members a and b of two classes X and Y using a common friend function. Assume that the prototype for both the classes will be void sum (X, Y). 5
 b) What is the use of constructor and destructor.Explain default constructor with example. 5

SECTION – 2

- Q-4.** a) What is an operator Overloading? Write a program to overload binary + operator as a member function. **5**
b) Explain overriding member function with example. **5**

- c) What is a constructor? Explain copy constructor and parameterized constructor with examples. **5**

OR

- c) Explain Late binding and abstract class with example. **5**

- Q-5.** a) Define Inheritance. Write the types of Inheritance. Explain Inheritance with example. Consider Example with respect to print result of Student and Student Details. **5**
b) Define virtual and pure virtual function with example. **5**

OR

- Q-5.** a) Define multi-path inheritance with example. **5**
b) What is polymorphism? Explain compile time and run time polymorphism. **5**

- Q-6.** a) Explain Exception handling with example. **5**
b) What is stream class? Explain ifstream, ofstream and fstream class. **5**

OR

- Q-6.** a) Explain file i/o with stream with one example. **5**
b) What is the purpose of using template in C++? Explain template function and template class with example. **5**

*******BEST OF LUCK*******

Exam Number: _____

KADI SARVA VISHWAVIDYALAYA
B.E. 1st (REG/ATKT) EXAMINATION FEBRUARY 2022

Subject Name : Object Oriented Programming Using 'C++'

Date: 14/02/2022(Monday)

Time: 12.30 pm to 3.30 pm

Subject Code: CC111-N

Total marks: 70

Instructions:

1. Answer each section in separate Answer sheet.
2. All questions are compulsory.
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-I

- Q.1 (A) What is structure? Explain the C syntax of structure declaration with example. (5)
(B) What is scope resolution operator? Explain with example. (5)
(C) Differentiate between procedure oriented and object oriented programming. (5)

OR

- (C) What is abstraction and encapsulation? Write a difference between Abstraction and Encapsulation. (5)
Q.2 (A) What is type conversion in C++? Explain implicit and explicit type conversion with example. (5)
(B) Create a class TIME with members hours, minutes, and seconds. Read values from keyboard and add two TIME objects (hint: by passing objects to function) and display result. (5)

OR

- Q.2 (A) What are constructors? Explain different types of constructors and How are they different from member functions? (5)
(B) What is a class and object? How is it created? Explain with example. (5)
Q.3 (A) Explain abstract class with example. (5)
(B) What is a friend function? Why is it required? Explain with an example. (5)

OR

- Q.3 (A) What is pointer? Explain how the pointer variable declared and initialized? Explain it with example. (5)
- (B) Explain manipulators with example. (5)

Section-II

- Q.4 (A) What are inline functions? Explain with example. (5)
- (B) How does C++ uses concept of reusability? Write a program in C++ to illustrate use of Polymorphism. (5)
- (C) Explain Function overloading with example. (5)

OR

- (C) Write a C++ program to demonstrate function overloading. Create function area() that calculates area of circle, triangle and box. (5)
- Q.5 (A) Explain operator overloading with example. (5)
- (B) Discuss the role of access modes in inheritance and show their visibility when they are inherited as public, private and protected. (5)

OR

- Q.5 (A) Write down the example to overload unary and binary operators in C++. (5)
- (B) Explain different types of inheritance with block diagram and an example for each. (5)

- Q.6 (A) Explain Virtual base function with example. (5)
- (B) Explain try catch and throw exception handling in c++. (5)

OR

- Q.6 (A) Explain the various file stream classes available for file operations. (5)
- (B) Explain class template and function template. (5)

KADI SARVA VISHWAVIDYALAYA**B.E. SEMESTER – II (NEW) EXAMINATION DECEMBER - 2024**

Subject Name: OBJECT ORIENTED PROGRAMMING USING ‘C++’

Subject Code: CC111-N

Date: 26/12/2024 (Thursday)

Time: 12:30 p.m. to 03:30 p.m.

Total Marks: 70

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-I

- Q.1** (A) Describe the characteristic differences between OOP and POP. [5]
 (B) Differentiate main () function of C and C++. Give general format of Class. [5]
 (C) Define Structure. Explain C syntax of structure with example. [5]

OR

- (C) Write a program to find length of string using pointer and without using string Functions. [5]

- Q.2** (A) Explain merits and demerits of inline functions. [5]
 (B) Write a C++ program to find volume of cube and cylinder using concepts of function overloading. (volume of cube = r^3 , volume of cylinder is $\pi r^2 h$). [5]

OR

- Q.2** (A) Define friend function? In which scenario friend function is used? Explain it with suitable example. [5]
 (B) Write a program to perform addition of two complex numbers using constructor overloading. The first constructor which takes no argument is used to create objects which are not initialized, second which takes one argument is used to initialize real and imaginary parts to equal values and third which takes two argument is used to initialized real and imaginary to two different values [5]

- Q.3** (A) Explain access specifiers: public and private with example. [5]
 (B) Explain type conversion with example in C++. [5]

OR

- Q.3** (A) Explain call by reference with example. [5]
 (B) Explain reference variable with example. [5]

Section-II

- Q.4 (A) Define an operator overloading? Write a program to overload binary + operator. [5]
(B) Explain inheritance. List various type of it and explain Multilevel inheritance with example. [5]
(C) Describe abstract class with example. [5]

OR

- (C) Define Overriding. Explain with suitable example. [5]

- Q.5 (A) Explain template function and template class with example. [5]
(B) Explain the difference between static and dynamic binding. [5]

OR

- Q.5 (A) Define an Exception? Give example with multiple catch blocks. [5]
(B) Differentiate between Virtual and Pure Virtual function with example. [5]

- Q.6 (A) Define a stream? Describe various stream classes for console I/O operations. [5]
(B) Write a program to define the function template for calculating the square of given numbers with different data types. [5]

OR

- Q.6 (A) Enlist and discuss different file modes in C++. [5]
(B) Create a base class called SHAPE. Use this class to store two double type values. Derive two specific classes called TRIANGLE and RECTANGLE from the base class. Add to the base class, a member function getdata to initialize base class data members and another member function display to compute and display the area of figures. Declare this member function as virtual. Write a C++ program to implement the class that accepts dimensions and calculate area.