

**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.

ii) what is reference variable in c++.

**(B)** Define pointer? Explain pointer and array with example.

**(C)** Enlist and explain the basic characteristics of OOP in detail.

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.

**Q-2 (A)** Explain type conversion from class type to basic type and one class type to another class type with suitable example

**(B)** What is function overloading? Illustrate with suitable example.

OR

**Q-2 (A)** Define Terms: i) Object ii) Class iii) Destructor iv) Token  
v) Identifiers.

**(B)** Explain Access specifiers: public and private with example.

**Q-3 (A)** Explain inline function with suitable example

**(B)** What is a constructor? Explain different types of constructors with an appropriate example.

OR

**Q-3 (A)** What is friend Function? Explain the characteristics of friend function

**(B)** Explain 'this' pointer' with example.

## **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]

**KADI SARVA VISHWAVIDYALAYA**  
**LDRP INSTITUTE OF TECHNOLOGY & RESEARCH, GANDHINAGAR**

**B.E. MID-SEMESTER EXAMINATION MAY- JUNE 2022**

|   |                   |
|---|-------------------|
| Date : 01/06/2022   | Branch : CE/IT/EC |
| Subject Name & Code: Object Oriented Programming using C++(CC111-N) | Semester : 2nd    |
| Time : 9:30 am to 11:00 am  | Max. Marks : 30   |

- 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**.

- |           |   | Marks |
|-----------|---|-------|
| Q.1       | (A) Differentiate procedure oriented programming and object oriented programming.   | [5]   |
|           | (B) Explain the basic concepts of OOPC and its advantages.  | [5]   |
| Q.2       | (A) Illustrate with example, working of endl, setw manipulator.   | [5]   |
|           | (B) Explain the usage of inline function. Write a program to demonstrate the use of inline functions by creating 1 inline functions for multiplication operation. | [5]   |
| <b>OR</b> |   |       |
| Q.2       | (A) Which concept of OOP demonstrate the function overloading. Explain function overloading with example.   | [5]   |
|           | (B) Explain Access specifier: Public and Private in Detail.   | [5]   |
| Q.3       | (A) Demonstrate + operator (Binary operator) overloading using an example.  | [5]   |
|           | (B) State the output or errors (if any).  | [5]   |

|   |  |
|---|--|
| <pre> 1) #include &lt;stdio.h&gt; void fun(int *ptr) {     *ptr = 30; } int main() {     int y = 20;     fun(&amp;y);     printf("%d", y);     return 0; } </pre> | <pre> 2) class car {     int x;     car() {         cout&lt;&lt;"constructor called";     } }; int main() {     car c1,c2,c3; } </pre> |
|---|--|

**OR**

- |     |   |     |
|-----|---|-----|
| Q.3 | (A) Write a Program to find Maximum out of Two Numbers using friend function.<br>Note: Here one number is a member of one class and the other number is member of some other class. | [5] |
|     | (B) State the importance and use of operator overloading. Explain unary operator overloading.   | [5] |

BEST OF LUCK



Enroll. /Temp Id No.

**KADI SARVA VISHWAVIDYALAYA**  
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|-----|---|-------|
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| Q.2 | (A) Illustrate with example, working of endl, setw manipulator.   | [5]   |
|     | (B) Explain the usage of inline function. Write a program to demonstrate the use of inline functions by creating 1 inline functions for multiplication operation. | [5]   |
| OR  |   |       |
| Q.2 | (A) Which concept of OOP demonstrate the function overloading. Explain function overloading with example.   | [5]   |
|     | (B) Explain Access specifier: Public and Private in Detail.   | [5]   |
| Q.3 | (A) Demonstrate + operator (Binary operator) overloading using an example.  | [5]   |
|     | (B) State the output or errors (if any).  | [5]   |

|  |  |
|--|--|
| <pre> 1) #include &lt;stdio.h&gt;    void fun(int *ptr)    {        *ptr = 30;    }    int main()    {        int y = 20;        fun(&amp;y);        printf("%d", y);        return 0;    } </pre> | <pre> 2) class car{    int x;    car(){        cout&lt;&lt;"constructor called";    } }; int main(){    car c1,c2,c3; } </pre> |
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OR

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| Q.3 | (A) Write a Program to find Maximum out of Two Numbers using friend function.<br>Note: Here one number is a member of one class and the other number is member of some other class. | [5] |
|     | (B) State the importance and use of operator overloading. Explain unary operator overloading.   | [5] |

BEST OF LUCK

**KADI SARVA VISIWAVIDYALAYA**  
**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 5
- v) Identifiers. 5
- c) i) How does main() function in C differ from C++? Give General format of Class.
- ii) what is reference variable in c++.

**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.

**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\*\*\*\*\*