GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–IV(NEW) EXAMINATION – WINTER 2022

Subject Code:2140705   **Date:17-12-2022**
Subject Name:Object Oriented Programming With C++
Time:10:30 AM TO 01:00 PM   **Total Marks:70**
Instructions:
1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Simple and non-programmable scientific calculators are allowed.**

			MARKS
Q.1	(a)	What is OOP? List advantages of OOP.	03
	(b)	Explain reference variable with suitable example.	04
	(c)	Define constructor. List and explain different types of constructors. Write a program for copy constructor.	07
Q.2	(a)	Explain new and delete operators of C++.	03
	(b)	Differentiate call by value and call by reference with suitable example.	04
	(c)	What is a friend function? Explain it with suitable example.	07
		OR	
	(c)	What is operator overloading? Overload any one binary operator.	07
Q.3	(a)	What is a Destructor? Explain with suitable example.	03
	(b)	What is an inline function? List its advantages. Also give a suitable example.	04
	(c)	Create a matrix class to store a 3x3 integer matrix. Implement member function to print values, add two matrices and multiply two matrices. Also write main() for this.	07
		OR	
Q.3	(a)	Explain static data member and static function.	03
	(b)	Explain default arguments with suitable example.	04
	(c)	Create two classes DM and DB which store the value of distances. DM stores values in Metres and Centimeters while DB stores values in Feet and Inches. Write a program that can read object values, print object values and add one object of DM with another object of DB. (1 inch=2.54 centimeters)	07
Q.4	(a)	Explain "this" pointer with suitable example.	03
	(b)	Differentiate function overloading and function overriding.	04
	(c)	Define Inheritance. Explain diagrammatically different inheritance type. Write a program to implement "multiple" inheritance example.	07
		OR	
Q.4	(a)	Explain virtual function with suitable example.	03
	(b)	Explain use of scope resolution operator (::) with suitable example.	04
	(c)	Write a program to read a file. Toggle character case (lower to upper & vice versa) and store result in other file.	07
Q.5	(a)	Explain public and private access specifiers.	03
	(b)	Explain virtual base class with suitable example.	04

(c)	Explain exception handing mechanism in C++. Write a program to implement exception handling.	**07**

<div align="center">OR</div>

Q.5	**(a)**	Explain different file modes in C++.	**03**
	(b)	Explain Standard Template Library (STL) with its core components.	**04**
	(c)	Write a class template to represent a generic vector. Include member functions to perform following tasks, to create the vector, to modify the value of a given element, to multiply by a scalar value and to display vector.	**07**

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