GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–IV(NEW) – EXAMINATION – SUMMER 2019

Subject Code:2140705   **Date:25/05/2019**
Subject Name: Object Oriented Programming With C++
Time:02:30 PM TO 05:00 PM   **Total Marks: 70**

Instructions:
1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

Q.1	**(a)**	Explain the concept of data abstraction and encapsulation in OOP.	**03**
	(b)	Describe the concept of enumerated data Type in C++ with a proper example.	**04**
	(c)	What is call by reference and return by reference? Explain with a suitable example.	**07**
Q.2	**(a)**	Write any three benefits of Object Oriented Programming.	**03**
	(b)	Explain the use of C++ operators: new and delete.	**04**
	(c)	What is function polymorphism? Explain it with an appropriate C++ program.	**07**

OR

	(c)	Write characteristics of static data member and static member function. Explain the concept of static data member and static member function with a C++ program.	**07**
Q.3	**(a)**	Explain basic to class type conversion with appropriate example.	**03**
	(b)	Write a program to find out product of two private data members p and q of two classes X and Y using a common friend function. Assume that the prototype for both the classes will be: void product(X, Y);	**04**
	(c)	What is a constructor? Explain different types of constructors with an appropriate example.	**07**

OR

Q.3	**(a)**	Explain inline function with suitable example.	**03**
	(b)	What is the use of destructor in C++? Explain with a suitable example.	**04**
	(c)	Explain runtime polymorphism. Explain and demonstrate, how virtual function to achieve runtime polymorphism?	**07**
Q.4	**(a)**	Describe the use of "this" pointer with an example.	**03**
	(b)	Explain following functions with example 1. put() 2. get()	**04**
	(c)	Explain various forms of inheritance with diagrammatic illustrations. Also explain any one type of inheritance with an appropriate program.	**07**

OR

Q.4	**(a)**	Explain visibility mode with its types.	**03**
	(b)	Write a program that uses following functions: width(), precision().	**04**

(c) Write a following C++ program to explain objects as function arguments. Define a class name "Point" with two data member variable *x* and *y*, member function for getting the value of member variable from user and second member function for displaying the value of member variable. Define third member function that takes another Point object as an argument and returns the Euclidean distance between the two Point objects. [for point $P(x_1,y_1)$ and point $Q(x_2,y_2)$ Euclidean distance = sqrt$((x_2-x_1)^2 + (y_2-y_1)^2)$] **07**

Q.5 **(a)** Describe various stream classes for console I/O operations. **03**
(b) Write a C++ program to handle Exception "division by zero" situation. **04**
(c) What is the general format of function template? Write a C++ program for bubble sort using template functions. **07**

OR

Q.5 **(a)** Explain ios::app, ios::ate and ios::trunc flags. **03**
(b) Write a program for swapping two values of different data types using template. **04**
(c) Explain STL with its core components. **07**

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