GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–IV (OLD) EXAMINATION – WINTER 2018

Subject Code:140705   **Date: 14/12/2018**

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 basic concepts of Object Oriented Programming.	**07**
	(b)	Describe various operators in C++.	**07**
Q.2	**(a)**	Describe following terms in C++ with suitable examples. Function overloading, Function Overriding , Call by reference	**07**
	(b)	What is Inline Function? In which Situation Inline Function may not work? How does an Inline function differ from a preprocessor macro? Write program using Inline Function to find largest of three numbers.	**07**
		OR	
	(b)	Explain Friend function and its characteristics. Define a class matrix with an integer array of 2*2 as a data member. Define a friend function, which adds two matrix objects and returns resultant matrix object.	**07**
Q.3	**(a)**	Discuss the use of static data members and static member functions with examples.	**07**
	(b)	What is a constructor? Explain types of constructors with examples.	**07**
		OR	
Q.3	**(a)**	Define Inheritance. Write the types of Inheritance. Explain Inheritance with example. Consider Example with respect to print Student Details like name, enrollment no, SPI and department.	**07**
	(b)	Explain the type conversion from basic type to class type and from class type to basic type with proper example.	**07**
Q.4	**(a)**	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 + operator to add two complex objects and return the results. Invoke the statements like C3=C1+C2 in main ().	**07**
	(b)	What is Exception? Explain Exception HandlingMechanism. Write a program that demonstrates use of multiple catch. Add at least three catch block in your Program.	**07**
		OR	
Q.4	**(a)**	Explain Runtime polymorphism. Explain and demonstrate, how virtual function to achieve runtime polymorphism?	**07**
	(b)	Write a C++ program that creates inventory of items by storing item_code, item name and qty. Access the data using pointers.	**07**
Q.5	**(a)**	What is a stream? Describe various stream classes for console I/O operations.	**07**
	(b)	What is Template? Write General format of class templates and function Template. Write program to swap Number using Function Template.	**07**

OR

Q.5 **(a)** Write a program that reads a text file and creates another file that is identical   **07**
except that every character is in upper case.

(b) (i) Explain new and delete operator. What are the advantages of new operator   **04**
over malloc?

(ii) Explain Scope Resolution Operator with example.   **03**

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