Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–IV(New) EXAMINATION – SUMMER 2016

Subject Code:2140705 Date:08/06/2016

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.**

			MARKS
Q.1		**Short Questions**	**14**
	1	Why C++ is not a pure object oriented programming language?	
	2	Explain encapsulation property of an OOP language.	
	3	Define *class* in C++.	
	4	What is the use of namespace in C++?	
	5	What are *stream extraction* and *stream insertion* operators?	
	6	Define *destructor*.	
	7	What is a *friend class*?	
	8	What is an *abstract* class?	
	9	What is the use of private inheritance?	
	10	Briefly explain multi-level inheritance.	
	11	Explain *pure virtual function*.	
	12	Discuss various *access specifiers* in C++.	
	13	What is the use of overloading an assignment (=) operator?	
	14	Explain *tellg( )* function in file streams.	
Q.2	**(a)**	Explain function overloading with a program.	**03**
	(b)	Create two classes X and Y containing private variables *x* and *y* respectively. Using a common friend function, perform multiplication operation between *x* and *y*.	**04**
	(c)	Create a class *coordinate* containing x, y and z private variables. Perform operations for incrementing, adding and comparing object(s) by overloading + +, + = and = = operators respectively. Define necessary functions to set and display the variables.	**07**
		OR	
	(c)	Write a program to demonstrate conversion of an object of one class into an object of another class.	**07**
Q.3	**(a)**	Explain *call by reference* with a program.	**03**
	(b)	Explain *this* pointer with a program.	**04**
	(c)	Write a program to create a class *distance* containing *feet* and *inches*. Using *operator* keyword, convert an object of class *distance* into *total meters* which is a float data type. (1 meter=3.28 feet)	**07**
		OR	
Q.3	**(a)**	Discuss *new* and *delete* keywords.	**03**
	(b)	Discuss *nameless temporary object*.	**04**
	(c)	Demonstrate the use of *static variables* and *static functions* with a program.	**07**
Q.4	**(a)**	Explain Scope Resolution Operator (::) with a program.	**03**
	(b)	Explain *virtual base class* with a program.	**04**

	(c)	Write a program which uses command line argument to copy the contents of a file *A.txt* into another file *B.txt* by reversing case of the characters. *E.g. File A.txt: aBCd File B.txt: AbcD*	**07**

OR

Q.4	**(a)**	Discuss the use of *inline* functions.	**03**
	(b)	Demonstrate the use of *virtual functions* with a program.	**04**
	(c)	Explain the use of binary files in C++ with a program.	**07**
Q.5	**(a)**	Explain *ios::app* and *ios::ate* flags.	**03**
	(b)	Explain the use of multiple handlers in exception handling with a program.	**04**
	(c)	Create a generic class *stack* using *template* and implement common *Push* and *Pop* operations for different data types.	**07**

OR

Q.5	**(a)**	Explain *ios::binary* and *ios::trunc* flags.	**03**
	(b)	Discuss *Standard Template Library*.	**04**
	(c)	With a program, explain exception handling in C++.	**07**

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