Seat No.: _____   Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–IV(New) • EXAMINATION – WINTER 2016

Subject Code:2140705   **Date:24/11/2016**
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		Answer the following questions	14
	1	Why do we need preprocessor directive #include <iostream.h>?	
	2	What is a reference variable?	
	3	When will you make a function inline?	
	4	When do we declare a member of a class static?	
	5	How do we invoke a constructor function?	
	6	What is an operator function?	
	7	When do we use protected visibility specifier to a class member?	
	8	When do we make a class virtual?	
	9	What does this pointer do?	
	10	What role does the iomanip file play?	
	11	Write a statement using seekg () to go backward by 20 bytes from the end.	
	12	What is template?	
	13	When should a program throw an exception?	
	14	List out three key component of STL.	
Q.2	(a)	What are the unique advantages of an OOP paradigm?	03
	(b)	Can we have more than one constructor in a class? If yes explain the need for such a situation.	04
	(c)	Illustrate the program to demonstrate public, private and protected members of a class with respect to publicly inherited derived class.	07

OR

	(c)	Illustrate the program to demonstrate runtime polymorphism.	07
Q.3	(a)	When is a friend function compulsory? Give an example.	03
	(b)	Explain the concept of call by reference with an example.	04
	(c)	Describe, with example the uses of enumeration data types.	07

OR

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Q.3 (a) What is a copy constructor? Explain with an example. 03

(b) When do we need to use default argument in a function? Explain with an example. 04

(c) What is a conversion function? Explain it with example program. 07

Q.4 (a) Why do we need virtual functions? When do we make a virtual function 'pure'? 03

(b) How is polymorphism achieved at (a) compile time, and (b) run time? 04

(c) Write a program which reads the information like Name, age and weight of ten people from the keyboard and displays it on the screen in four columns: Sr. No, Name, Weight and Age. Strings should be left-justified and numbers should be right-justified in a suitable field width. 07

OR

Q.4 (a) A friend function cannot be used to overload the assignment operator =. Explain why? 03

(b) What are the different forms of inheritance? Give an example for each. 04

(c) A file contains a list of telephone numbers in the following form: 07

John   23406

Ahmed   56789

...   .

The names contain only one word and the names and telephone numbers are separated by white spaces. Write a program to read the file and output the list in two columns. The names should be left-justified and numbers should be right-justified in a suitable field width.

Q.5 (a) What is generic programming? How is it implemented in C++? 03

(b) Explain the functions used to read and write data in binary file. 04

(c) Write a program that illustrates the application of multiple catch statements. 07

OR

Q.5 (a) What is an exception? How is it handled in C++? 03

(b) What is the basic difference between manipulators and *ios* member functions in implementation? Give examples. 04

(c) Write a function template for finding the minimum value contained in an array. 07

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