

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 04
such a situation.
- (c) Illustrate the program to demonstrate public, private and protected members of a 07
class with respect to publicly inherited derived class.

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

- 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
