

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-IV (NEW) EXAMINATION – WINTER 2017

Subject Code: 2140705

Date: 29/11/2017

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) What is object oriented programing? What are the advantages of an object-oriented programing paradigm? **03**
 - (b) How is polymorphism achieved at (1) compile time, and (2) run time? **04**
 - (c) What is overloading of a function? When do we use this concept? Explain with an example. **07**
- Q.2**
- (a) What is STL? How is it different from the C++ Standard library? **03**
 - (b) What is a file mode? Describe the various file mode options available. **04**
 - (c) What is a reference variable? What is its major use? Explain with an example. **07**
- OR**
- (c) What do you mean by dynamic binding? How is it useful in OOP? Explain with an example. **07**
- Q.3**
- (a) An unsigned int can be twice as large as the signed int. Explain how? **03**
 - (b) Can we have more than one constructor in a class? If yes, explain the need for such a situation. **04**
 - (c) What is a conversion function? How is it created. Explain with example. **07**
- OR**
- Q.3**
- (a) When do we declare a member of a class static? Why? **03**
 - (b) Distinguish between following two statements:
Time T2(T1);
Time T2= T1;
T1 and T2 are objects of Time class. **04**
 - (c) What is an operator function? Explain with an example. **07**
- Q.4**
- (a) Why do we need virtual functions? **03**
 - (b) When do we use protected visibility specifier to a class member? Explain with an example. **04**
 - (c) Explain with an example, how would you create a space for an array of objects using pointers. **07**
- OR**
- Q.4**
- (a) What is a virtual base class? **03**
 - (b) When do we make a virtual function “pure”? What are the implications of making a function a pure virtual function? **04**
 - (c) What are the different forms of inheritance? Give an example for each. **07**
- Q.5**
- (a) How do the following two statements differ in operation?
cin>>c;
cin.get(c); **03**
 - (b) Describe the various approaches by which we can detect the end of file condition. **04**
 - (c) Write a function template for finding the minimum value from an array. **07**

OR

- Q.5**
- (a)** Discuss the syntax of set () function. **03**
 - (b)** Write a program that reads a text file and creates another file that is identical except that every sequence of consecutive blank space is replaced by a single space. **04**
 - (c)** Write a class template to represent a generic vector. Include member function to create the vector and to modify the value of a given element. **07**
