

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-V • EXAMINATION – WINTER 2013

Subject Code: 152004

Date: 02-12-2013

Subject Name: Object-Oriented Programming in C++

Time: 10:30 pm 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.**

- | | | |
|------------|--|-----------|
| Q.1 | (a) Explain Constructor and Destructor in detail with example. | 07 |
| | (b) Explain key concepts of Object Oriented Programming with example. | 07 |

- | | | |
|------------|---|-----------|
| Q.2 | (a) List and Explain types of inheritance with proper example. | 07 |
| | (b) What do you mean by unary, binary and ternary operator? How can we overload operator? Which operators cannot be overloaded? Write a C++ program to add complex numbers using operator overloading. | 07 |

OR

- (b)** What is type conversion? **07**
Explain following type conversion with example

 - 1) Conversion from basic type to class type
 - 2) Conversion from class type to basic type
 - 3) Conversion from class type to class type

- Q.3** (a) Explain “this” pointer with example. **07**
 (b) What is runtime polymorphism? How can we achieve it? Explain with example. **07**

OR

- | | | | |
|------------|------------|--|-----------|
| Q.3 | (a) | Explain following functions with its syntax and example | 07 |
| | | <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> 1) <code>get()</code>
 2) <code>put()</code>
 3) <code>getline()</code> </div> <div style="width: 48%;"> 4) <code>width()</code>
 5) <code>precision()</code>
 6) <code>fill()</code>
 7) <code>setf()</code> </div> </div> | |
| | (b) | Explain pure virtual function. Is it possible to make constructors and destructors virtual? If yes than state the reasons, if no than also state the reason. | 07 |

- Q.4 (a)** Explain open() function with all file mode parameter. **07**
- (b)** Define Generic Programming. Explain class template with multiple parameters with example. **07**

OR

- | | | |
|------------|---|-----------------------------------|
| Q.4 | <p>(a) What is the use of try, catch and throw blocks in C++? Explain catching mechanism.</p> <p>(b) Define containers. Explain all types of containers supported by Standard template library in detail.</p> | <p>07</p> <p>07</p> |
|------------|---|-----------------------------------|

- | | | | |
|------------|------------|---|-----------|
| Q.5 | (a) | Demonstrate copy constructor by using the example of finding factorial. | 07 |
| | (b) | Create a Class student stores the roll no, Class test stores the marks obtained in two subjects and class result contains the total marks obtain in the test. Class result can inherit the details of the marks obtain in the test and the roll no. of the student class. | 07 |

OR

- Q.5 (a)** Write a vector class template for performing the scalar product of int type vectors as well as float type vectors in C++.

(b) Write a C++ program for exception handling divide by zero.

07
