Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

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

Subject Code: 2142005 **Date: 12/06/2017**

Subject Name: Programming Methodology using 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.**

Q.1 Short Questions **14**

1 Which are basic run time entities?
2 OOPS uses bottom-up approach. Is TRUE or False?
3 Which operator is called insertion operator?
4 What is the default return type of main C++?
5 Which operator is memory allocation operator?
6 Which statement is used to jump of a loop?
7 Inheritance is not a feature of OOP only. Is true or false?
8 How many objects can be created from the class?
9 Constructor name is same as class name. Is true or false?
10 We can overload constructors. Is true or false?
11 Operator overloading is type of Polymorphism. Is true or false?
12 Class from which new class in derived is called.
13 Which block detects error and throw exception?
14 What is the return value of strlen("Gtu"); function?

Q.2 **(a)** Explain Default and copy constructor **03**
(b) Write a program to find square root of given number. **04**
(c) Enlist and explain the basic concepts object-oriented programming. **07**

OR

(c) What is RTTI? Explain the syntax of typeid operator. Explain with example the concept of RTTI using typeid operator**.** **07**

Q.3 **(a)** Explain >> and << operators. **03**
(b) Explain how to allocate and de-allocate memory dynamically. **04**
(c) Define operator overloading. Write a program to overload unary plus Operator. **07**

OR

Q.3 **(a)** Describe multi-level and multiple inheritances. **03**
(b) Explain two usage of keyword virtual. **04**
(c) Define – stream. Discuss various stream classes with its contents available for console I/O operations. **07**

Q.4 **(a)** Explain keywords protected and public. **03**
(b) Explain needs and usage of this pointer. **04**
(c) What is STL? Enlist and explain core components of STL. Also show the relationship between them **07**

OR

Q.4 **(a)** Explain manipulators. **03**

(b) Declare a class called book having members like book_title, publisher and author_name. Overload extractor and inserter operators (>> and <<) for class book. **04**
(c) Explain the steps involved in object-oriented design approach. **07**

Q.5 **(a)** Explain tellg and seekp functions. **03**
(b) Explain try, catch and throw. Give one simple example. **04**
(c) Why templates are used in programming? Explain with proper example. **07**

OR

Q.5 **(a)** Explain const_cast<type> (expr) **03**

(b) What is Base & Derived class ? **04**

(c) Enlist types of inheritance and explain any one in detail with proper programming example**.** **07**

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