

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VI (NEW) EXAMINATION – SUMMER 2022****Subject Code:3160922****Date:06/06/2022****Subject Name:Object Oriented Programming****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.
4. Simple and non-programmable scientific calculators are allowed.

**MARKS**

- Q.1** (a) What is Object-Oriented Programming (OOP)? How is it different from the procedure-oriented programming? **03**
- (b) Explain identifier and constants with examples. **04**
- (c) Distinguish between the following terms: (a) Objects and classes, (b) Data abstraction and data encapsulation, (c) Inheritance and polymorphism, (d) Dynamic binding and message passing **07**
- Q.2** (a) What are the benefits of OOP? **03**
- (b) What do you mean by dynamic initialization of a variable? Give an example. **04**
- (c) Write a program to arrange an array of N elements into ascending order using OOP in C++. **07**
- OR**
- (c) Write a program in C++ using to swap the values of a pair of integers. **07**
- Q.3** (a) Explain inline function with example. **03**
- (b) Explain the different types of data members of the class. **04**
- (c) What do you mean by *call by value* and *call by reference*? Justify your answer with suitable example. **07**
- OR**
- Q.3** (a) Explain 'this' pointer with example. **03**
- (b) What is class? How class accomplish the task of data hiding? **04**
- (c) What is friend function? Write a program to find out sum of two private data members  $x$  and  $y$  of two classes  $A$  and  $B$  using a common friend function. **07**
- Q.4** (a) List out the type of inheritance. **03**
- (b) Describe arrays of object. **04**
- (c) Create a class distance with feet and inches as two data members. Define the necessary member function to get the data of two distance objects from user, add both the objects of distance class and display the result. Invoke all member function from main function. **07**
- OR**
- Q.4** (a) What are the characteristics of constructor in C++? **03**
- (b) Explain static data members. **04**
- (c) Create a class time with hours and minutes as two data members. Get the data of two-time objects from user and overload function with + operator to add both time objects and display the result. **07**

- Q.5** (a) Enlist the rules for overloading operators. **03**  
(b) Describe different ways to open file with suitable example. **04**  
(c) With suitable examples, explain try, catch and throw. **07**

**OR**

- Q.5** (a) Explain copy constructor and its use by giving an example. **03**  
(b) What is Exception handling in C++? **04**  
(c) Create a class called ITEM that has separate member data for item number (integer type) and item cost (real number). Include the following member functions: **07**
- setdata( ) to set these values to predefined values in the program
  - getdata( ) to get these values from the user
  - putdata( ) to display these values.

\*\*\*\*\*