

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI EXAMINATION – SUMMER 2025****Subject Code:3160922****Date:26-05-2025****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) Discuss arithmetic operators in C++ programming.	03
	(b) What is namespace? What is “ namespace std ” explain it in detail and also elaborate the concept by creating your own namespace.	04
	(c) Enlist Distinguishing features of Object-oriented programming, and justify any two of the features.	07
Q.2	(a) Classify IO Stream Library	03
	(b) Give the applications of any one Manipulators in file operation	04
	(c) Explain New and delete operator, along with sample program. Also differentiate it with C language equivalent implementation.	07
OR		
	(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.3	(a) Explain static data member and static member function. With a suitable program code?	03
	(b) What is friend function? Explain with a suitable example.	04
	(c) Write a program using C++ which calculates squares of all even number,	07
OR		
Q.3	(a) Discuss the application of Destructors and give example for the same.	03
	(b) Explain function call by value, call by pointer and call by reference.	04
	(c) What do you mean by function prototype, function call, function arguments and function returntype.	07
Q.4	(a) Discuss the concept of data encapsulation using a program of C++ .	03
	(b) Explain virtual funtions.	04
	(c) Write a program using C++ exhibiting constructors usage for initializing volume paramters and function polymorphism for calculating volume of cube, cylinder, and rectangular box.	07
OR		
Q.4	(a) What is friend function? Explain with a suitable example.	03
	(b) What do you mean by inheritance ? Give classification for the same.	04
	(c) Explaing single level inheritance using a C++ program.	07
Q.5	(a) Explain pointer with example.	03
	(b) Write down the rules for implementing operator overloading.	04

(c) Define a class to represent a GTU student account. include the following

07

Data members:

1. Name of the Student.
2. Enrollment number.
3. Gender
4. Mobile Number.
5. Marks of 5 subjects

Member functions:

1. To assign initial value to 1st four data members.
2. To display the marks of particular student.
3. To display full details of the students along with the marks.

Also write a main function to test the program.

OR

Q.5 (a) List various access specifiers of C++ language, and explain all of them in short

03

(b) Explain the exception handling of C++ language.

04

(c) Write a program in C++ for addition of two time frames given in HH:MM:SS stored in objects t1 and t2 respectively and t3 saves the result.

07

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI (NEW) EXAMINATION – SUMMER 2024****Subject Code:3160922****Date:20-05-2024****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) Identify difference between Object Oriented Programming and Procedure Oriented Programming?	03
	(b) Define identifier and its use. Write down the rules to follow while defining the identifiers.	04
	(c) Explain three pillars of the OOP in detail.	07
Q.2	(a) Define type casting and give a suitable example.	03
	(b) Explain numerical data types with example.	04
	(c) Write a program to demonstrate the basic arithmetic operations using switch statement in C++ language. Consider any error in calculation for special case.	07
OR		
	(c) Write a program to sort array of N elements in descending order using OOP in C++.	07
Q.3	(a) Write a difference between private and public members of a Class. Give any example.	03
	(b) What is operator overloading? and stat the case when we require operator overloading.	04
	(c) Demonstrate the use of function overloading with at list one example. Explain the case in detail.	07
OR		
Q.3	(a) Define constructor and destructor regards to class and object.	03
	(b) What is exception Handling and explain the same using a example.	04
	(c) Write a program to demonstrate the use of scope resolution operator :: with variable name.	07
Q.4	(a) Define data encapsulation with example.	03
	(b) Enlist and discuss various types of Access Specifiers	04
	(c) Classify different types of Inheritance and explain in short each of them.	07
OR		
Q.4	(a) Define polymorphism with an example.	03
	(b) Elaborate INLINE Function.	04
	(c) Write a simple program that multiple two numbers and then also divides the two numbers. (Use Inline functions)	07

- Q.5** (a) Enlist different types of exception in C++ programming. **03**
(b) Write a program for finding the volume of various objects, demonstrating the polymorphism phenomenon in Constructors. **04**
(c) Write a program to demonstrate the use of try, catch and throw. **07**

OR

- Q.5** (a) Define stream in C++ programming. **03**
(b) What is manipulators? **04**
(c) List out various file management functions for formatted and unformatted output. **07**

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI (NEW) EXAMINATION – SUMMER 2023****Subject Code:3160922****Date:10-07-2023****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) Identify any 6 Major differences between C++ and C language	03
	(b) Define identifier and its use. Write down the rules to follow while defining the identifiers.	04
	(c) Write a short note on three pillars of the Object-Oriented Programming.	07
Q.2	(a) Define type casting and give a suitable example.	03
	(b) Explain numerical data types with example.	04
	(c) Write a program to demonstrate the basic arithmetic operations using switch statement in C++ language. Consider any error in calculation for special case.	07
	OR	
(c)	Write a program to sort array of N elements in ascending order using OOP in C++.	07
Q.3	(a) Give comparison between private and public members of a Class. Give any example.	03
	(b) What is operator overloading? and stat the case when we require operator overloading.	04
	(c) Demonstrate the use of function overloading with at list one example. Explain the case in detail.	07
	OR	
Q.3	(a) Define constructor and destructor regards to class and object.	03
	(b) Explain exception Handling using an example.	04
	(c) Write a program to demonstrate the use of scope resolution operator :: with variable name.	07
Q.4	(a) Explain data encapsulation with example.	03
	(b) Enlist and discuss various types of Access Specifiers	04
	(c) Classify different types of Inheritance and explain in short each of them.	07
	OR	
Q.4	(a) Explain polymorphism with an example.	03
	(b) Elaborate INLINE Function.	04
	(c) Write a simple program that multiple two numbers and then also divides the two numbers. (Use Inline functions)	07
Q.5	(a) Enlist different types of exception in C++ programming.	03
	(b) Write a program for finding the volume of various objects, demonstrating the polymorphism phenomenon in Constructors.	04
	(c) Demonstrate the use of try, catch and throw using a program.	07
	OR	
Q.5	(a) Define stream in C++ programming.	03
	(b) What are manipulators?	04
	(c) List out various file management functions for formatted and unformatted output.	07

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 <i>call by value</i> and <i>call by reference</i> ? 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.
