

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER-VI EXAMINATION – WINTER 2025

Subject Code:3160922

Date:19-11-2025

Subject Name:Object Oriented Programming

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.
4. Simple and non-programmable scientific calculators are allowed.

		MARKS
Q.1	(a) What is object-oriented programming? What are the advantages of an object-oriented programming paradigm?	03
	(b) Explain the concept of data abstraction and encapsulation in OOP.	04
	(c) Write a program in C++ to generate the Fibonacci series (up to 20 data) using class Fibonacci: (The series can be written as: 1 1 2 3 5 8 ...)	07
Q.2	(a) Explain the use of C++ operators: new and delete.	03
	(b) Explain: Object and Class.	04
	(c) What is an expression? Explain their types with example.	07
	OR	
	(c) Enlist the various operators used in C++. Explain any three of them.	07
Q.3	(a) Explain the “if...else...” conditional statement with suitable example in C++.	03
	(b) What is dynamic initialization of a variable? Give an example.	04
	(c) What is function polymorphism? Explain it with an appropriate C++ program.	07
	OR	
Q.3	(a) Explain the “for” loop statement with suitable example in C++.	03
	(b) Describe arrays of object with suitable example.	04
	(c) Explain the terms with suitable examples: <i>call by value</i> and <i>call by reference</i> ?	07
Q.4	(a) Explain basic to class type conversion with appropriate example.	03
	(b) Explain inline function with suitable example.	04
	(c) What is a constructor? Explain different types of constructors with an appropriate example.	07
	OR	
Q.4	(a) Describe the application of "this" pointer with an example.	03
	(b) Explain the purpose of destructor in C++ with a suitable example.	04
	(c) What is an operator overload? Write a program to overload binary “+” operator as a member function.	07

- Q.5 (a)** What is Exception handling in C++? **03**
- (b)** Explain pure virtual functions with example. **04**
- (c)** What are the various forms of inheritance? Explain any one type of them with an appropriate program in C++. **07**

OR

- Q.5 (a)** What is the purpose of template in C++? **03**
- (b)** Demonstrate the application of virtual functions with a suitable program. **04**
- (c)** What is a stream? Explain different stream classes for console I/O operations in C++. **07**

GUJARAT TECHNOLOGICAL UNIVERSITY
BE- SEMESTER-VI (NEW) EXAMINATION – WINTER 2024

Subject Code:3160922

Date:28-11-2024

Subject Name:Object Oriented Programming

Time:02:30 PM TO 05:00 PM

Total Marks:70

Instructions:

1. Attempt all questions.
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		Marks
Q.1	(a) Discuss arithmetic operators in C++ programming.	03
	(b) Discuss the programming structure of C++ language.	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) Enlist any 7 Major differences between C++ and C programming language.	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) Write a program depicting operator overloading.	03
	(b) What is function overloading, explain it with a suitable example.	04
	(c) Discuss the application of Constructor & Destructor and give example for the same.	07
	OR	
Q.3	(a) Discuss the application of Inline function and give example for the same.	03
	(b) What is friend function? Explain with a suitable example.	04
	(c) Write a program using C++ which calculates area of square, rectangle, and circle.	07
Q.4	(a) Explain Poly-Morphism in detail?	03
	(b) What is Inheritance? Explain single inheritance with an example.	04
	(c) Write a program of multiplying numbers, using the function overloading phenomenon of C++.	07
	OR	
Q.4	(a) Explain virtual functions.	03
	(b) What do you mean by function prototype, function call, function arguments and function return type.	04
	(c) Write a program to demonstrate the use of static member data.	07
Q.5	(a) Explain 'this' pointer with example.	03
	(b) Write down the rules for implementing operator overloading.	04

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

07

Data members:

1. Name of the depositor.
2. Account number.
3. Type of account.
4. Balance amount in the account.

Member functions:

1. To assign initial value.
2. To deposit an amount.
3. To withdraw an amount after checking the balance.
4. To display name and balance.

Also write a main function to test the program.

OR

Q.5 (a) Explain the exception handling of C++ language.

03

(b) List various access specifiers of C++ language, and explain all of them in short

04

(c) Create a class called ITEM that has separate member data for item number(int) and item cost(float).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.

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI(NEW) EXAMINATION – WINTER 2022****Subject Code:3160922****Date:15-12-2022****Subject Name:Object Oriented Programming****Time:02:30 PM TO 05:00 PM****Total Marks:70****Instructions:**

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Q.1 (a) Explain the benefits of Object-Oriented Programming.	03
(b) Explain 'if... else....' conditional statement with proper example.	04
(c) Write a program to generate the following series in C++ using class 'Fibonacci': 1 1 2 3 5 8	07
Q.2 (a) Explain differences between structure and class.	03
(b) Explain >> and << operators.	04
(c) Explain User Defined Data type in details.	07
OR	
(c) What do you mean by <i>call by value</i> and <i>call by reference</i> ? Justify your answer with suitable example.	07
Q.3 (a) Describe inline function.	03
(b) Distinguish the abstract class and virtual base class.	04
(c) Explain the use of <i>static variables</i> and <i>static functions</i> with a program.	07
OR	
Q.3 (a) Explain 'this' pointer.	03
(b) What is friend function? Explain the need of friend function.	04
(c) Write a function for finding the minimum value from an array and main program to which can call the above function and print the minimum value.	07
Q.4 (a) What is pure virtual function?	03
(b) How is polymorphism achieved during compile time and run time?	04
(c) Explain different types of Inheritance with example.	07
OR	
Q.4 (a) Explain Scope Resolution Operator (::).	03
(b) Explain the difference between two statements: Date D2(D1) and Date D2= D1; where D1 and D2 are objects of Date class.	04
(c) Write a C++ program that overloads + operator to add two complex numbers.	07
Q.5 (a) What is protected members in inheritance?	03
(b) Describe the various approaches by which we can detect the end of file condition.	04
(c) Explain the use of binary files in C++ with a program.	07
OR	
Q.5 (a) Discuss <i>new</i> and <i>delete</i> keywords.	03
(b) Explain different types of constructors with an appropriate example.	04
(c) Explain exception handling in C++ with suitable program.	07

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