	Parul University **Faculty of Engineering and Technology** **Parul Institute of Engineering and Technology** **Computer Science Engineering-Cyber Security Department**

Subject Name	**Objected Oriented Programming using C++**	**A. Y**	**2025-26**
Subject Code	**03010502ES01**	**Semester**	**2**

Chapter-1

Sr No	Question	COs	B.T
1	Differentiate between OOP and POP.	1	Understand
2	Explain the applications of Object-Oriented Programming.	1	Remember
3	Write the structure of a C++ program.	1	Remember
4	Discuss basic data types in C++.	1	Remember
5	Explain user-defined data types with examples.	1	Understand
6	Demonstrate derived data types in C++.	1	Apply
7	Write a program for dynamic initialization of variables.	1	Apply
8	Explain reference variables with examples.	1	Understand
9	Discuss operators in C++ and their categories.	1	Remember
10	Explain scope resolution operator with example.	1	Understand
11	Compare access specifiers: public, private, protected.	1	Analyze

Chapter-2

12	Explain the concept of inline functions.	2	Remember
13	Write a program using default arguments.	2	Apply
14	Explain constant arguments in functions.	2	Understand
15	Demonstrate function overloading with examples.	2	Apply
16	Define class and create objects in C++.	2	Remember
17	Write a program with nested member functions.	2	Apply
18	Explain private member functions with examples.	2	Understand
19	Discuss friend functions in C++.	2	Remember
20	Design a class with inline and friend functions.	2	Create

Chapter-3

21	Explain constructors in C++.	3	Remember
22	Differentiate between default, parameterized, and copy constructors.	3	Understand
23	Write a program using parameterized constructor.	3	Apply
24	Demonstrate copy constructor with example.	3	Apply
25	Explain destructors in C++ with example.	3	Understand
26	Write a program to show constructor and destructor execution order.	3	Apply
27	Discuss importance of destructors in memory management.	3	Evaluate

Chapter-4

28	Explain inheritance in C++.	4	Remember
29	Define derived classes with example.	4	Understand
30	Write a program for single inheritance.	4	Apply
31	Demonstrate multiple inheritance with example.	4	Apply
32	Write a program for multilevel inheritance.	4	Apply
33	Explain hybrid inheritance with example.	4	Understand
34	Compare function overloading vs overriding.	4	Analyze

35	Write a program to demonstrate function overriding.	4	Apply
36	Explain virtual base class with example.	4	Understand
37	Discuss abstract classes in C++.	4	Remember
38	Evaluate the role of abstract classes in design.	4	Evaluate
Chapter-5			
39	Explain pointers to objects in C++.	5	Remember
40	Write a program using pointer to derived class.	5	Apply
41	Demonstrate virtual functions with example.	5	Apply
42	Explain pointer to virtual functions.	5	Understand
43	Discuss the significance of ‘this’ pointer.	5	Understand
44	Write a program using ‘this’ pointer.	5	Apply
45	Analyze how virtual functions enable runtime polymorphism.	5	Analyze
46	Compare static binding vs dynamic binding in C++.	5	Analyze
47	Design a program demonstrating polymorphism using virtual functions.	5	Create
48	Evaluate the importance of pointers in object-oriented programming.	5	Evaluate
49	Explain the concept of dynamic dispatch in C++.	5	Understand
50	Write a program combining inheritance and virtual functions.	5	Create