Semester:3th	Department of Electronics and Computer Engineering	AY: 2026-27
Course Code: 1BUE305	Course Name: Object Oriented Programming using C++	

Question Bank

Q.	Module-01	M	L	C
1.	Define object-oriented programming and explain its major features with suitable examples.	10	L2	CO1
2.	Explain the basic structure of a C++ program and describe the purpose of its major components.	10	L2	CO1
3.	Explain classes and objects in C++ and demonstrate their implementation using a suitable program.	10	L3	CO1
4.	Explain friend functions and friend classes. Write a program demonstrating the use of a friend function.	10	L3	CO1
5.	Explain inline functions in C++ and demonstrate their declaration and use with an example.	10	L2	CO1
6.	Explain parameterized constructors and demonstrate how they initialize objects using a C++ program.	10	L3	CO1
7.	Explain static data members and static member functions with a suitable C++ program.	10	L3	CO1
8.	Explain when constructors and destructors are executed during an object's lifetime, with an example.	10	L2	CO1
9.	Explain the scope resolution operator and demonstrate its use in defining class member functions outside the class.	10	L3	CO1
10.	Demonstrate how objects can be passed to functions, returned from functions, and assigned to other objects using a C++ program.	10	L3	CO1
	Module-02			
11.	Explain arrays of objects and demonstrate their declaration, initialization, and use in a C++ program.	10	L3	CO2
12.	Explain pointers to objects and demonstrate how object members are accessed using pointers.	10	L3	CO2
13.	Explain the this pointer and demonstrate its use in a C++ class with a suitable program.	10	L3	CO2
14.	Explain pointers to derived types and pointers to class members with suitable examples.	10	L2	CO2
15.	Explain dynamic memory allocation using new and delete operators and demonstrate their use in a C++ program.	10	L3	CO2
16.	Explain function overloading and write a C++ program to demonstrate overloaded functions with different parameter lists.	10	L3	CO2
17.	Explain constructor overloading and demonstrate the use of multiple constructors in a class.	10	L3	CO2
18.	Explain copy constructors and demonstrate how an object is initialized from another object using a C++ program.	10	L3	CO2

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19.	Explain default function arguments and demonstrate their use in a C++ program.	10	L3	CO2
20.	Analyze function overloading ambiguity and explain how appropriate function declarations and argument types can resolve it.	10	L4	CO2
	Module-03			
21.	Explain operator overloading in C++ and describe its advantages and limitations with suitable examples.	10	L2	CO3
22.	Write a C++ program to overload an arithmetic operator using a member operator function.	10	L3	CO3
23.	Explain operator overloading using a friend function and demonstrate it with a suitable C++ program.	10	L3	CO3
24.	Explain the overloading of new and delete operators and describe their role in dynamic memory management.	10	L2	CO3
25.	Explain public, private, and protected access control in inheritance with suitable examples.	10	L2	CO3
26.	Explain inheritance involving protected members and demonstrate how access to inherited members is controlled.	10	L3	CO3
27.	Write a C++ program demonstrating multiple inheritance using two base classes and one derived class.	10	L3	CO3
28.	Explain the order of execution of constructors and destructors in an inheritance hierarchy with an example.	10	L2	CO3
29.	Explain how access can be granted to class members in inheritance and demonstrate the relevant C++ mechanisms.	10	L2	CO3
30.	Explain virtual base classes and demonstrate how they help resolve the diamond problem in multiple inheritance using a C++ program.	10	L3	CO3
	Module-04			
31.	Explain virtual functions in C++ and describe their role in achieving runtime polymorphism.	10	L2	CO4
32.	Write a C++ program demonstrating how a virtual function behaves in a class hierarchy.	10	L3	CO4
33.	Explain how virtual functions are inherited and demonstrate their use in a hierarchical class structure.	10	L3	CO4
34.	Explain pure virtual functions and abstract classes with a suitable C++ program.	10	L3	CO4
35.	Differentiate between early binding and late binding with suitable examples.	10	L4	CO4
36.	Explain polymorphism in C++ and demonstrate how it supports flexible and reusable program design.	10	L2	CO4
37.	Explain generic functions and write a function template that operates on different data types.	10	L3	CO4
38.	Explain generic classes and demonstrate the implementation of a class template using a suitable C++ program.	10	L3	CO4
39.	Explain the purpose of the type name and export keywords in the context of C++ templates, as covered in the syllabus.	10	L2	CO4
40.	Analyze how virtual functions and templates support code reusability and	10	L4	CO4

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	flexibility in C++ applications.			
Module-05				
41.	Explain the fundamentals of exception handling in C++ and describe the roles of try, throw, and catch with an example.	10	L2	CO5
42.	Write a C++ program to handle an exception generated during a division operation.	10	L3	CO5
43.	Explain how exceptions involving derived classes are handled and describe the importance of catch-block ordering.	10	L2	CO5
44.	Explain different exception-handling options in C++ and demonstrate a suitable approach using a program.	10	L3	CO5
45.	Explain the C++ I/O stream system and describe the roles of the major stream classes.	10	L2	CO5
46.	Explain formatted input and output in C++ and demonstrate the use of formatting manipulators with a program.	10	L3	CO5
47.	Explain the purpose of the <fstream> header and differentiate between the major file stream classes used in C++.	10	L2	CO5
48.	Write a C++ program to open a text file, write data to it, and close the file properly.	10	L3	CO5
49.	Write a C++ program to read data from a text file and explain how the end-of-file condition can be detected.	10	L3	CO5
50.	Develop a C++ program that reads records from a text file, processes the data, and handles file-opening or reading errors using exception handling where appropriate.	10	L3	CO5

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***Note:**

1. All modules should contain a minimum of **10** questions each and the total number of questions must be **50**.
2. Questions can carry marks of 06, 07, 08, 09, 10 and for problems: 04 or 05.
3. Follow the RBTL as per the keywords used to frame the questions.
4. Maintain the Course Outcomes (COs) as per the syllabus.
5. M: Marks, L: RBTL, C:COs.