

USN

Second Semester B.E./B.Tech. Degree Examination, Dec.2025/Jan.2026
Introduction to C++ Programming

Time: 3 hrs.

Max. Marks: 100

*Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
 2. M : Marks , L: Bloom's level , C: Course outcomes.*

Module – 1			M	L	C
Q.1	a.	Explain the basic concepts of object oriented programming with suitable examples.	08	L2	CO1
	b.	Write a C++ program to demonstrate the use of classes and objects by defining a simple student class.	06	L3	CO1
	c.	Differentiate between abstraction and encapsulation with an example in C++.	06	L4	CO1
OR					
Q.2	a.	Explain the features of C++ compared to C.	06	L2	CO1
	b.	Write a C++ program to demonstrate encapsulation using a class with private and public data members methods.	08	L3	CO1
	c.	Define Polymorphism. Give suitable examples of the Abstract class.	06	L4	CO1
Module – 2					
Q.3	a.	What are inline functions? Write a program to calculate the cube of a number using an inline function.	06	L3	CO2
	b.	Demonstrate function overloading by writing a program to overload the add() function for integer and double values.	08	L3	CO2
	c.	Explain call by reference with a suitable program.	06	L2	CO2
OR					
Q.4	a.	Explain default arguments in C ++ with an example.	06	L2	CO2
	b.	Explain the use of scope resolution operator with an example program.	06	L2	CO2
	c.	Write a C++ program to swap two values using call by reference.	08	L3	CO2
Module – 3					
Q.5	a.	Explain multiple inheritance in C++ with a neat example.	06	L2	CO3
	b.	Write a C++ program to demonstrate multilevel inheritance using classes Vehicle → Fourwheeler → car.	08	L3	CO3
	c.	Compare runtime polymorphism and compile time polymorphism with an example.	06	L4	CO3

OR

Q.6	a.	Discuss the types of inheritance in C++ with examples.	08	L2	CO3
	b.	Write a C++ program to demonstrate hierarchical inheritance using shape → triangle, Rectangle.	08	L3	CO3
	c.	Differentiate between base class constructor and derived class constructor.	04	L4	CO3

Module – 4

Q.7	a.	Explain the hierarchy of I/O stream classes in C++.	06	L2	CO4
	b.	Write a C++ program to create a text file, write data into it, and then read the contents back.	08	L3	CO4
	c.	Differentiate between text file and binary file handling in C++.	06	L4	CO4

OR

Q.8	a.	Explain the process of handling binary files in C++.	06	L2	CO4
	b.	Write a C++ program to write and read employee details (name, ID, salary) from a binary file.	08	L3	CO4
	c.	Compare file streams (ifstream, ofstream, and fstream) with examples.	06	L4	CO4

Module – 5

Q.9	a.	Explain the benefits of exception handling in C++.	06	L2	CO4
	b.	Write a C++ program that demonstrate division by zero using try, catch and throw.	08	L3	CO4
	c.	Explain predefined exceptions in C++ with examples.	06	L2	CO4

OR

Q.10	a.	Explain the use of try and catch blocks with an example.	06	L2	CO4
	b.	Write a C++ program that handles array out of bounds exceptions.	08	L3	CO4
	c.	Differentiate between throw statement and rethrowing an exception.	06	L4	CO4
