

## INDIRA UNIVERSITY, Pune

## SCHOOL OF INFORMATION TECHNOLOGY BSC (AIML)

Term End Examination (2025 Pattern) December – 2025 - Semester – I

**Subject Name: - Object Oriented concepts and  
Programming using C++**

**Max. Marks: 25****Subject Code: 25AML101T****Time: 1:30 Hrs.****Instructions**

- All Questions are Compulsory.

CO #	Cognitive Ability	Course Outcome
CO1	Remember	Recall fundamental programming and object-oriented concepts to establish a strong theoretical foundation for software development.
CO3	Apply	Develop modular and efficient programs by applying object-oriented programming techniques in real-world scenarios.
CO5	Evaluate	Assess and validate programming solutions using appropriate logic, debugging strategies, and error-handling mechanisms.

Q1.	<b>Attempt any 5 out of 7. (1 mark each)</b>	<b>(5 Marks)</b>	CO1
	a) Define inheritance. b) Define the term “object”. c) Name the three types of access specifiers in C++. d) What is a static data member? e) Name any two types of inheritance. f) Define a virtual base class. g) Name the three keywords used in exception handling.		
Q2.	<b>Attempt any 2 out of 4. (5 marks each)</b>	<b>(10 Marks)</b>	CO3
	a) Develop a program that uses a for loop to display the multiplication table of a given number. b) Construct a class named Student with data members for roll number and marks. Write a program to create an array of objects to store and display details.		

	<p>c) Demonstrate the use of default arguments in a function using C++ program.</p> <p>d) Demonstrate the concept of exception handling in C++ and why it is important in robust program design.</p>		
<b>Q.3.</b>	<p><b>Attempt all questions.</b></p> <p>a) Evaluate and justify the output:-</p> <pre>#include &lt;iostream&gt; using namespace std;  inline int square(int n) {     return n * n; }  int main() {     cout &lt;&lt; square(4); }"</pre> <p>b) Evaluate the difference between call by value and call by reference in C++. Which approach is more suitable?</p>	<p><b>(10 Marks)</b></p> <p><b>(5 M)</b></p> <p><b>(5 M)</b></p>	CO5
<b>Q.3</b>	<p><b>(Alternative)</b></p> <p>Evaluate the role of templates in programming in C++. Compare their use with function overloading.</p>	<b>( 10 Marks)</b>	CO5

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