

**PSG COLLEGE OF ARTS & SCIENCE**  
(AUTONOMOUS)  
**BSc DEGREE EXAMINATION MAY 2025**  
(Fourth Semester)

Branch - MATHEMATICS

**C++ PROGRAMMING**

Time: Three Hours

Maximum: 75 Marks

**SECTION-A (10 Marks)**

Answer ALL questions

ALL questions carry EQUAL marks (10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	Which of the following is a feature of Object-Oriented Programming? a) Procedural abstraction    b) Dynamic binding c) Top-down approach       d) Machine-level language	K1	CO1
	2	What is the correct structure of a basic C++ program? a) Header files, main function, and classes b) Header files, classes, and main function c) Main function, header files, and classes d) Classes, header files, and functions	K2	CO1
2	3	Which of the following is a user-defined data type in C++? a) float                            b) int c) class                            d) double	K1	CO2
	4	What does the scope resolution operator (::) do in C++? a) Allocates memory dynamically b) Defines the scope of a global variable c) Resolves ambiguity in overloaded functions d) Accesses class members	K2	CO2
3	5	Which keyword is used to make a function inline? a) inline                            b) const c) static                            d) virtual	K1	CO3
	6	What is the output of the following code snippet? int a = 5, b = 10; cout << a++ + ++b; a) 16                                b) 15 c) 17                                d) Undefined	K2	CO3
4	7	Which of the following is true about constructors? a) They can be virtual functions. b) They can return values. c) They are automatically called when an object is created. d) They can have any name.	K1	CO4
	8	What is the purpose of a destructor? a) Initialize an object. b) Allocate memory. c) Free resources allocated to an object. d) Perform arithmetic operations.	K2	CO4
5	9	Which type of inheritance is shown below? class A { }; class B : public A { }; class C : public A { }; a) Single Inheritance        b) Hierarchical Inheritance c) Multiple Inheritance      d) Multilevel Inheritance	K1	CO5
	10	What is the default mode for opening a file in C++? a) ios::in                            b) ios::out c) ios::binary                      d) ios::app	K2	CO5

Cont...

**SECTION - B (35 Marks)**

Answer ALL questions

ALL questions carry EQUAL Marks (5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Compare procedural programming and object-oriented programming paradigms.	K2	CO1
		(OR)		
	11.b.	Explain the structure of a C++ program with an example.		
2	12.a.	Explain operator overloading in C++ with an example.	K3	CO2
		(OR)		
	12.b.	Write a short note on scope resolution operator and its use in C++.		
3	13.a.	Explain inline functions and their advantages with an example.	K4	CO3
		(OR)		
	13.b.	Discuss the use of static data members and static member functions in C++.		
4	14.a.	What are parameterized constructors? Provide an example.	K4	CO4
		(OR)		
	14.b.	Explain type conversions in C++ with an example.		
5	15.a.	What are file pointers? Explain their manipulations with an example.	K3	CO5
		(OR)		
	15.b.	Describe multiple inheritance with a suitable example.		

**SECTION -C (30 Marks)**

Answer ANY THREE questions

ALL questions carry EQUAL Marks (3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	Discuss the basic concepts of object-oriented programming and its applications.	K4	CO1
2	17	Explain data types in C++ with suitable examples, including user-defined and derived data types.	K4	CO2
3	18	Write a C++ program to demonstrate the use of friend functions and explain its implementation.	K4	C03
4	19	Explain the concept of overloading binary operators using friend functions with an example.	K4	C04
5	20	Write a detailed note on inheritance and its types in C++ with examples.	K4	C05