CBCS SCHEME

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BCS306B

Third Semester B.E./B.Tech. Degree Examination, Dec.2024/Jan.2025
Object Oriented Programming with C++

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.	What is meant by constructor? Discuss the types of constructors in C++ with example.	07	L2	CO1
	b.	Demonstrate with example, how friend functions, friend classes and inline functions are useful in C++.	07	L2	CO1
	c.	With a sample program, demonstrate the general format of a C++ program.	06	L3	CO1
		OR			
Q.2	a.	List the various access specifiers supported by OOPs. Illustrate their use.	07	L2	CO1
	b.	What is the significance of static data and member functions in C++? Explain.	07	L2	CO1
	c.	What is Object Oriented Programming? Explain its features.	06	L2	CO1
		Module – 2			
Q.3	a.	Develop a object oriented program to find the smallest and biggest among array elements.	07	L3	CO2
	b.	Discuss pointers to object with example code. Also discuss their advantages.	07	L2	CO2
	c.	Explain different array type in C++ with suitable example code snippet.	06	L3	CO2
		OR			
Q.4	a.	What is "this" pointer? Illustrate the use of "this" pointer in C++.	07	L2	CO2
	b.	Discuss when two or more functions are said to be overloaded. Identify the causes of ambiguity in function overloading.	07	L2	CO2
	c.	What is a dynamic constructor? Explain with an example program.	06	L3	CO2
		Module – 3			
Q.5	a.	List the operators in C++ that can not be overloaded. Develop a C++ program using "Time" class, to overload the '+' and '-' operators.	07	L3	CO3
	b.	Illustrate the role of access-specifiers in different level of inheritances.	07	L2	CO3
	c.	Discuss various types of inheritances with suitable example codes.	06	L3	CO3
		OR			
Q.6	a.	Illustrate the use of constructors and destructors in inheritance in C++.	07	L2	CO3
	b.	Develop a program in C++ to derive a class "Manager" from class "Person" and "Employee". Consider suitable data members and member-functions for the classes.	07	L3	CO3
	c.	Explain "Virtual base Class" with an example.	06	L3	CO2

		Module – 4			
Q.7	**a.**	Design a C++ program demonstrating the use of the Pure Virtual function using base and derived classes. Also explain the code.	**07**	**L3**	**CO4**
	b.	What is polymorphism in C++? Explain its types with example.	**07**	**L3**	**CO4**
	c.	Explain virtual function in C++. Discuss what is early and late binding.	**06**	**L2**	**CO4**
		OR			
Q.8	**a.**	What are generic functions? Demonstrate the use of generic function in swapping two variables of any type.	**07**	**L2**	**CO4**
	b.	What is typename and export keyword? Discuss their usage. Discuss the advantages of using templates in C++.	**07**	**L2**	**CO4**
	c.	Explain the use of a class template. Also explain class template with suitable code snipplet.	**06**	**L3**	**CO4**
		Module – 5			
Q.9	**a.**	Explain the fundamentals of exception handling in C++. Analyze the benefits of exception handling.	**07**	**L2**	**CO5**
	b.	Discuss different standard exceptions in C++.	**07**	**L2**	**CO5**
	c.	Develop a C++ program to demonstrate the usage of try, catch and through to handle exceptions.	**06**	**L3**	**CO5**
		OR			
Q.10	**a.**	What are the different file opening modes in C++? Compare and contrast file opening modes.	**07**	**L2**	**CO5**
	b.	Explain file streams with example.	**06**	**L3**	**CO5**
	c.	Develop a C++ program to create a text file, check file is created or not, if created, write some text in to the file and the read and display the text from the file.	**07**	**L3**	**CO5**

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