



Paper ID : 260836

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Subject Code: BOE064

Roll No:

BTECH

(SEM. VI) THEORY EXAMINATION 2025-26

OBJECT ORIENTED PROGRAMMING

TIME: 3 HRS

M.MARKS: 70

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt all questions in brief.

2x7 = 14

(a)	What is the meaning of Object Orientation.	CO-1	K1
(b)	How does polymorphism improve flexibility and reusability in object-oriented systems?	CO-1	K2
(c)	Discuss Sequence Diagrams in UML.	CO-2	K1
(d)	What is physical packaging in object-oriented design?	CO-3	K1
(e)	What is the basic structure of a C++ program?	CO-4	K1
(f)	Differentiate between inline functions and macro functions.	CO-4	K1
(g)	What are classes and objects in C++?	CO-5	K1

SECTION B

2. Attempt any three of the following:

7 x 3 = 21

(a)	Explain the concepts of object identity, encapsulation, and information hiding with suitable examples.	CO-1	K2
(b)	Explain the concept of Basic Structural Modeling in UML. Discuss classes, relationships, common mechanisms, and diagrams.	CO-2	K2
(c)	How are object-oriented concepts mapped into non-object-oriented languages? Explain with examples.	CO-3	K3
(d)	Define identifiers, variables, and constants in C++. How are they used in program development?	CO-4	K3
(e)	Explain constructors and destructors in C++. Describe different types of constructors and their importance in object initialization and cleanup.	CO-5	K2

SECTION C

3. Attempt any one part of the following:

7 x 1 = 7

(a)	Describe the key features and benefits of UML (Unified Modeling Language) in object-oriented analysis and design.	CO-1	K2
(b)	What is modeling in software engineering? Explain the importance and principles of object-oriented modeling.	CO-1	K2

4. Attempt any one part of the following:

7 x 1 = 7

(a)	Define Class Diagram and Object Diagram. Explain their terms, concepts, and modeling techniques with examples.	CO-2	K2
(b)	Explain Collaboration Diagrams in UML. How are messages, polymorphism, iterated messages, and self-messages represented?	CO-2	K3

5. Attempt any one part of the following:

7 x 1 = 7

(a)	Differentiate between Object-Oriented Analysis, Object-Oriented Design (OOD), and Object Design.	CO-3	K2
(b)	Compare Procedural Programming and Object-Oriented Programming (OOP) with suitable examples.	CO-3	K3

6. Attempt any one part of the following:

7 x 1 = 7

(a)	What are control structures in C++? Explain decision-making and looping statements with examples.	CO-4	K3
(b)	What are functions in C++? Explain call by value, call by reference, and return by reference with examples.	CO-4	K3

7. Attempt any one part of the following:

7 x 1 = 7

(a)	What is operator overloading and type conversion in C++? Explain how both are implemented with suitable examples.	CO-5	K3
(b)	What is inheritance in C++? Explain different types of inheritance (single, multiple, multilevel, hierarchical, and hybrid) with examples and discuss the concept of virtual base classes.	CO-5	K2