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**Printed Page:-2** **Subject Code:- BCSBS0302Z**

**Roll. No:**

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**NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA**
**(An Autonomous Institute Affiliated to AKTU, Lucknow)**
**B.Tech**
**SEM: III - THEORY EXAMINATION (2025- 2026)**
**Subject: Object Oriented Programming**

**Time: 2 Hours** **Max. Marks: 50**

**General Instructions:**

**IMP:** *Verify that you have received the question paper with the correct course, code, branch etc.*

***1.*** *This Question paper comprises of* ***three Sections -A, B, & C.*** *It consists of Multiple Choice Questions (MCQ's) & Subjective type questions.*

***2.*** *Maximum marks for each question are indicated on right -hand side of each question.*

***3.*** *Illustrate your answers with neat sketches wherever necessary.*

***4.*** *Assume suitable data if necessary.*

***5.*** *Preferably, write the answers in sequential order.*

***6.*** *No sheet should be left blank. Any written material after a blank sheet will not be evaluated/checked.*



**SECTION-A** 15

1. Attempt all parts:-

1-a. The default return type of a function in C (CO1,K2) 1

(a) void
(b) int
(c) float
(d) char

1-b. Access specifier allowing class members to be used only inside the same class (CO2,K2) 1

(a) Private
(b) Public
(c) Protected
(d) Static

1-c. Pointer to an object can be used to achieve _____. (CO3,K3) 1

(a) Encapsulation
(b) Dynamic binding
(c) Abstraction
(d) Constructor chaining

1-d. UML stands for _____.(CO4,K3) 1

(a) Unified Model Language
(b) Unified Modeling Language
(c) Universal Model Language
(d) User Modeling Language

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|---|---|---|
| 1-e. | Basic unit of UML is a _____. (CO4,K2) | 1 |
| | (a) Class | |
| | (b) Object | |
| | (c) Component | |
| | (d) Use case | |

2. Attempt all parts:-

| | | |
|---|---|---|
| 2.a. | Explain the purpose of scope and lifetime in variables (CO1,K2) | 2 |
| 2.b. | State the use of Scope Resolution Operator (::) in C++. (CO2,K2) | 2 |
| 2.c. | Differentiate between single and multiple inheritance. (CO3,K3) | 2 |
| 2.d. | Define polymorphism in object-oriented programming.(CO3,K2) | 2 |
| 2.e. | Identify the difference between cin and cout. (CO4,K3) | 2 |

**SECTION-B** 15

3. Answer any three of the following:-

| | | |
|---|---|---|
| 3-a. | Write a C program to demonstrate different control flow statements (if, switch, loops) and explain the output. (CO1,K3) | 5 |
| 3-b. | Describe exception handling steps using try, throw, and catch.(CO2,K2) | 5 |
| 3-c. | Write a C++ program to demonstrate data hiding using private data members and public member functions. Explain the output.(CO2,K3) | 5 |
| 3.d. | Describe various types of inheritance used in C++.(CO3,K2) | 5 |
| 3.e. | Design activity diagram for online ticket booking.(CO4,K4) | 5 |

**SECTION-C** 20

4. Answer any five of the following:-

| | | |
|---|---|---|
| 4-a. | Explain the concept of procedural programming and its advantages.(CO1,K2) | 4 |
| 4-b. | Illustrate the use of operators and expressions in C with examples.(CO1,K2) | 4 |
| 4-c. | Explain the necessity of Object-Oriented Programming with suitable examples.(CO2,K2) | 4 |
| 4-d. | Describe the concept of Data Hiding and its importance in OOP. (CO2,K2) | 4 |
| 4-e. | Illustrate operator overloading using '+' operator with an example. (CO3,K3) | 4 |
| 4-f. | Implement single inheritance in C++ for student and marks classes.(CO3,K3) | 4 |
| 4-g. | Construct UML diagram for an e-commerce checkout flow.(CO4,K4) | 4 |
| 4-h. | Compare binary and text file handling in C++.(CO4,K4) | 4 |