☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA
(An Autonomous Institute Affiliated to AKTU, Lucknow)
B.Tech
SEM: III - THEORY EXAMINATION (2024-2025)
Subject: Object Oriented Programming

Time: 3 Hours   **Max. Marks: 100**

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   20

1. Attempt all parts:-

1-a.   Choose a syntax for C Ternary operator from the list. (CO1)   1

(a)   condition ? expression1 : expression2;

(b)   condition : expression1 ? expression2;

(c)   condition ? expression1 < expression2;

(d)   condition < expression1 ? expression2;

1-b.   What is an example of iteration in C?   (CO1)   1

(a)   for

(b)   while

(c)   do-while

(d)   all of the mentioned

1-c.   Which operator is used for accessing global variables if the local variable of same   1
name exists in the code? (CO2)

(a)   Unary scope resolution operator

(b)   Accessing resolution operator

(c)   Ternary resolution operator

(d)   None of them

1-d.   A class data members and member functions belongs to   (CO2)   1

(a)   To file scope

(b)   To that function scope

(c)   That class scope

(d)   All of them

1-e.   Which superclass member won't be accessible to the subclass? (CO3)   1

    (a)   Public member

    (b)   Protected member

    (c)   Private member

    (d)   All of the mentioned

1-f.   _ is the feature of OOPs which is responsible for binding data with their implementation as a single entity? (CO3)   1

    (a)   Polymorphism

    (b)   Inheritance

    (c)   Abstraction

    (d)   Encapsulation

1-g.   Which is the correct example of a unary operator?(CO4)   1

    (a)   &

    (b)   ==

    (c)   —

    (d)   /

1-h.   Which of the following operators cannot be overloaded (CO4)   1

    (a)   . (Member Access or Dot operator)

    (b)   ?: (Ternary or Conditional Operator)

    (c)   :: (Scope Resolution Operator)

    (d)   All of the above

1-i.   Which of the following is a type of UML diagram? (CO5)   1

    (a)   Activity

    (b)   Context

    (c)   User Interface

    (d)   None of the above

1-j.   Which stream is used to input values to variables in the program? (CO5)   1

    (a)   Cin

    (b)   Cout

    (c)   main

    (d)   activity

2. Attempt all parts:-

2.a.   Describe role of type casting? (CO1)   2

2.b.   Define type checking. (CO2)   2

2.c.   What is a class? How do you define it? (CO3)   2

2.d.   Explain the difference between overloaded function and overridden function   2

	(CO4)	
2.e.	Define Stream in c++. (CO5)	2

SECTION-B   30

3. Answer any <u>five</u> of the following:-

3-a.	Explain associativity with suitable examples. (CO1)	6
3-b.	WAP to find the greatest of three numbers.(CO1)	6
3-c.	WAP to explain the concept of pass by refrence. (CO2)	6
3-d.	How do you allocate and deallocate memory in C++? Explain with example. (CO2)	6
3.e.	What are the various types of constructors in C++? Illustrate with an example. (CO3)	6
3.f.	Explain pointers to objects with example.[CO4]	6
3.g.	What are the different types Views in UML? (CO5)	6

SECTION-C   50

4. Answer any <u>one</u> of the following:-

4-a.	Write a program in C++ that prints the sum of digit of a given number. (CO1)	10
4-b.	Compare and contrast for, while and do-while looping statements (CO1)	10

5. Answer any <u>one</u> of the following:-

5-a.	Write down the program to demonstrate static keyword in C++. CO2	10
5-b.	Input student Name, Rollno, Branch, Age and telephone no as a record through class and display all the information.(CO2)	10

6. Answer any <u>one</u> of the following:-

6-a.	What is the difference between a private member and a protected member? Explain by using a suitable program. (CO3)	10
6-b.	Explain access specifiers in C++ with an example.(CO3)	10

7. Answer any <u>one</u> of the following:-

7-a.	What do you understand by class template in C++. (CO4)	10
7-b.	Explain the types of polymorphism with a suitable example. (CO4)	10

8. Answer any <u>one</u> of the following:-

8-a.	What are the elements which are used in activity diagrams? (CO5)	10
8-b.	Explain the types of diagrams In UML with example. (CO5)	10