A25 - 9276

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE, APRIL - 2025

OBJECT ORIENTED PROGRAMMING THROUGH C++

[Maximum Marks: **100**]   [Time: **3** Hours]

PART-A
[Maximum Marks: **10**]

I.   (Answer *all* questions in one or two sentences. Each question carries *2* marks)

1. Differentiate between structure and union.

2. What is scope resolution operator?

3. What is code reusability?

4. List any two keywords that are associated with exception handling in C+

5. What is a header file?   (5 x 2 = 10)

PART-B
[Maximum Marks: **30**]

II.   (Answer *any five* of the following questions.   Each question carries *6* marks)

1. Explain the syntax of switch statement with example.

2. Briefly explain the storage classes in C++.

3. Explain call by value and call by reference in functions with example.

4. What is a destructor? How is it used?

5. Define function overloading. Write a program to find the area of a rectangle,
    triangle and circle using function overloading.

6. What are the limitations of operator overloading?

7. What is a virtual function? Explain with example.   (5 x 6 = 30)

PART-C
[Maximum Marks: **60**]
(Answer *one* full question from each Unit. Each full question carries **15** marks)

UNIT – I

III.   a. Explain different forms of if statement with examples.   (8)

         b. Write a C++ program to find the roots of a quadratic equation.   (7)

<div align="center">**OR**</div>

IV.   a. What are the different looping statements in C++. Explain with examples.   (8)

      b. Write a C++ program to find the sum of digits of a number.   (7)

<div align="center">**UNIT – II**</div>

V.   a. What is a constructor? Explain different types of constructors with examples.   (8)

      b. Explain access control specifiers used in a class.   (7)

<div align="center">**OR**</div>

VI.   a. What is an inline function? Explain with example.   (7)

      b. Briefly explain the following

         i. Data hiding   ii. Encapsulation   (8)

<div align="center">**UNIT- III**</div>

VII.   a. What is a friend function? Explain the syntax of declaration and definition of a friend

      function.   (7)

      b. Explain single and multi level inheritance with programming examples.   (8)

<div align="center">**OR**</div>

VIII. a. Develop a class distance to represent distance in inches and feet. Write a program to

      find the sum of two distance using operator overloading.   (9)

      b. Explain about protected inheritance.   (6)

<div align="center">**UNIT - IV**</div>

IX.   a. Explain Template Class. State the need for template class.   (9)

      b. Differentiate between compile time binding and run time binding.   (6)

<div align="center">**OR**</div>

X.   a. Explain Exception handling in C++.   (8)

      b. Explain the usage of several base classes.   (7)

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