

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/  
MANAGEMENT/COMMERCIAL PRACTICE — APRIL, 2018**

**OBJECT ORIENTED PROGRAMMING THROUGH C++**

[Time : 3 hours

(Maximum marks : 100)

**PART — A**

(Maximum marks : 10)

Marks

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

1. Define preprocessor directives.
2. Define arrays. Write the syntax to declare an array using C++
3. What is data abstraction in OOP ?
4. Discuss operator overloading
5. Define templates in C++

(5×2 = 10)

**PART — B**

(Maximum marks : 30)

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

1. Explain different datatypes in C++
2. Explain default arguments in C++
3. Write a note on function overloading with an example.
4. Discuss base class and derived class. Illustrate with example.
5. Differentiate inheritance and composition.
6. What are virtual functions ? Explain in detail.
7. Write a note on input/output operators in C++

(5×6 = 30)

## PART — C

(Maximum marks : 60)

(Answer one full question from each unit. Each full question carries 15 marks.)

## UNIT — I

- III (a) Explain looping statements in C++ 9  
 (b) Write a note on storage classes in C++ 6

OR

- IV (a) Discuss the input and output with disk file. 9  
 (b) Write a program in C++ to check whether a given numbers is positive or negative. 6

## UNIT — II

- V (a) Write a C++ program, using the concept of class and objects, to read the details of a student such as roll number, name and marks for three subjects using a member function named `getdata()`, calculates his total marks and print the result using the member function `putdata()`. 9  
 (b) Explain the following Object Oriented Programming concept.  
 (i) Class (ii) Data encapsulation (iii) Polymorphism 6

OR

- VI (a) Write a note on constructors in C++ with suitable example. 9  
 (b) With an example, describe how the member functions are defined outside the class. 6

## UNIT — III

- VII (a) Write a program in C++ to overload binary operator '+' for finding the sum of two complex numbers. 9  
 (b) Explain visibility controls. 6

OR

- VIII (a) Define inheritance. What are the different types of inheritance supported by C++ 9  
 (b) What are the limitations of operator overloading ? 6

## UNIT — IV

- IX (a) Write a note on how a base class object pointer can invoke the member function of a derived class. Explain with example program. 9  
 (b) Explain the ambiguity problem in multiple inheritance. How it can be solved ? Explain with an example. 6

OR

- X (a) Discuss different exception handling mechanism provided by C++ 9  
 (b) Explain class templates in detail. 6