

No. of Printed Pages : 4 **BCS–031/BCS–131**

**BACHELOR OF COMPUTER
APPLICATIONS (REVISED)
(BCA)**

**Term-End Examination
December, 2025**

BCS-031/BCS–131 : PROGRAMMING IN C++

Time : 3 Hours

Maximum Marks : 100

***Note :** Question No. 1 is compulsory and carries
40 marks. Attempt any **three** questions
from the rest.*

1. (a) Compare structure and classes in C++.
Discuss the syntax of both with suitable
code. 5
- (b) What are abstract classes ? Explain the
purpose of abstract class with suitable
example. 5

- (c) What are constructors ? Write the characteristics of constructors. Also discuss the limitations of constructors. 5
- (d) List any *five* data types of C++ with an example of each. 5
- (e) Explain the term function overriding with the help of a suitable example code in C++. 5
- (f) Write the syntax of the following statements : 5
- (i) break
 - (ii) continue
 - (iii) goto
 - (iv) exit
- (g) Compare multiple inheritance with multilevel inheritance. 5
- (h) What is exception handling in C++ ? Explain with a suitable code segment in C++. 5
2. (a) Explain message passing in C++ with the help of an example. 5

- (b) Explain the association of dynamic binding and runtime polymorphism with suitable example. 5
- (c) What is the difference between a keyword and an identifier ? Explain with the help of an example. 5
- (d) What is a stream in C++ ? Name the streams generally used for file I/O. 5
3. (a) Write a program in C++ to define a class 'Employee' with a virtual function 'Salary'. Derive the class 'Manager' from the class 'Employee' and implement the salary function. Make necessary assumptions. 10
- (b) What is class template ? Create a class template for stack data structure. 10
4. (a) Write a program in C++ to copy the contents of one file into other file. 10
- (b) What are containers in C++ ? Explain the use of 'list' container class with the help of an example. 5

(c) In C++, how memory allocation is performed : 5

(i) when class is declared ? Explain.

(ii) when class is instantiated ? Explain.

5. Write short notes on the following : 4×5=20

(a) Virtual functions

(b) Polymorphism

(c) Memory management operations

(d) Function overloading

(e) 'This' pointer and its significance

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