

Basavarajeswari Group of Institutions

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT

(Autonomous Institute under Visvesvaraya Technological University, Belagavi)

2022 SCHEME

USN

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Course Code

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Second Semester B.E. Degree Summer Semester Examinations, September/October 2025

INTRODUCTION TO C++ PROGRAMMING

Duration: 3 hrs

Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. Missing data, if any, may be suitably assumed.

<u>Q. No</u>	<u>Question</u>	<u>Marks</u>	<u>(RBTL:CO:PO)</u>
<u>MODULE – 1</u>			
1.	a. Define the following terms with examples: (i) Class (ii) Object (iii) Polymorphism	06	(2:1:3.5.1)
	b. Compare object oriented programming and procedure oriented programming.	07	(2:1:3.5.1)
	c. Draw the basic structure of a C++ program, and write a suitable example program to highlight the program components.	07	(2:1:3.5.1)
(OR)			
2.	a. Write the shorts note on: (i) Access specifiers (ii) cascading of operators	06	(2:1:3.5.1)
	b. List and explain the basic concepts of OOP.	07	(2:1:3.5.1)
	c. How the << and >> operators are overloaded in C++? Demonstrate with the help of a program.	07	(2:1:3.5.1)
<u>MODULE – 2</u>			
3.	a. Write the shorts note on: (i) scope :: resolution operator (ii) Special assignment expressions in C++.	06	(1:2:3.5.1)
	b. Write a program to demonstrate function overloading.	07	(2:2:3.5.1)
	c. Compare the parameter passing techniques for a function call, Write a program to swap using call by reference technique.	07	(3:2:3.5.1)
(OR)			
4.	a. Is this possible to give same name to multiple functions? Justify your answer with suitable examples.	06	(1:2:3.5.1)
	b. Write the shorts notes on: (i) Recursive function (ii) Default arguments	07	(2:2:3.5.1)
	c. Write a program to implement inline concept of C++. Discuss the purpose and limitations of making a function as inline.	07	(3:2:3.5.1)
<u>MODULE – 3</u>			
5.	a. With syntax demonstrates the necessity of a constructor and destructor. Highlight special characteristics of constructor.	06	(1:3:3.5.1)
	b. Define Inheritance. Explain the different types of Inheritance with syntax for defining derived classes.	07	(2:3:3.5.1)

- c. Implement the concept of operator overloading in a C++ program by overloading the operator '+' to add two complex numbers. **07 (3:3:3.5.1)**
- (OR)**
6. a. Compare function overloading and function overriding and give examples for both. **06 (1:3:3.5.1)**
- b. What is Polymorphism? How to achieve polymorphism in C++? Explain in detail. **07 (2:3:3.5.1)**
- c. Build a program for: **07 (3:3:3.5.1)**
 Three classes Vehicle, Four-wheeler, and Car, the class Vehicle is the base class, the class Four-wheeler is derived from it and the class Car is derived from the class Four-wheeler. Class Vehicle has a method 'vehicle' that prints 'I am a vehicle', class Four-wheeler has a method ' Four-wheeler ' that prints 'I have four wheels', and class Car has a method 'car' that prints 'I am a car'.
 Which the type of inheritance, and how to get the below given output?
 I am a car
 I have four wheels
 I am a vehicle

MODULE – 4

7. a. Demonstrate with figure the C++ stream classes hierarchy in detail. **06 (1:4:3.5.1)**
- b. Discuss different unformatted IO functions being used in stream handling. **07 (2:4:3.5.1)**
- c. Build a program to accept the input until user types \$, store it in a file and display on screen. **07 (3:4:3.5.1)**
- (OR)**
8. a. Differentiate between text file and binary file. **06 (1:4:3.5.1)**
- b. Explain the following terms for binary file: **07 (2:4:3.5.1)**
 (i) Opening a file (ii) Reading from and writing to file (iii) Closing file.
- c. Build a program to accept the input until user types End, store it in a file and displays each word on a separate line **07 (3:4:3.5.1)**

MODULE – 5

9. a. Discuss how exceptions are different from syntax or semantic errors? Which are the types of exceptions? Explain. **06 (1:5:3.5.1)**
- b. How to avoid name collision using namespaces? Explain by developing a program with 2 user defined namespaces. **07 (2:5:3.5.1)**
- c. Demonstrate with help of a diagram and syntax, how a function invoked by try block can throw the exception. **07 (2:5:3.5.1)**
- (OR)**
10. a. What are the 4 basic tasks needed for exception handling? With diagram and syntax explain the mechanism of exception handling. **06 (1:5:3.5.1)**
- b. Write a program where multiple catch statements are used to handle multiple exceptions. **07 (2:5:3.5.1)**
- c. Discuss how the generic programming can be achieved using templates concepts in C++. **07 (2:5:3.5.1)**

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