DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

Date	November 2023	Maximum Marks	50
Course Code	22PL15D	Duration	90 Min
Sem	I	CIE – I	

PROGRAMMING LANGUAGE COURSE
(Introduction to C++ Programming)

SL No.	Test Questions	M	BT	CO
1.a	Distinguish between procedure-oriented and object-oriented programming.	4	L2	CO1
1.b	Explain in detail the general form of a C++ Program with a suitable example.	6	L2	CO1
2.a	Describe the rules for naming the identifiers.	4	L2	CO1
2.b	Design a C++ program to check whether a character is Vowel or Consonant.	6	L3	CO3
3.a	Design a C++ program which makes use of a function to check whether a given year is Leap year or not.	6	L3	CO3
3.b	Differentiate between a Constant and Variable with examples	4	L2	CO1
4.a	Illustrate the categories of operators with suitable examples for each.	6	L2	CO2
4.b	Describe the advantages of Object Oriented programming	4	L2	CO1
5.a	Using the syntax and examples, describe any two C++ iteration statements.	6	L3	CO2
5.b	Define arrays with suitable examples.	4	L2	CO1

BT-Blooms Taxonomy, CO-Course Outcomes, M-Marks

Marks Distribution	Particulars		CO1	CO2	CO3	CO4	L1	L2	L3	L4	L5	L6
	Test	Max Marks	30	08	12	--	--	30	20	--	--	--

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RV Educational Institutions
RV College of Engineering
Autonomous Institution Affiliated to Visvesvaraya Technological University, Belagavi
Approved by AICTE New Delhi

Academic year 2023-2024 (Odd Sem)

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

Date	Dec 2023	Maximum Marks	50
Course Code	22PL15D	Duration	90 Min
Sem	I	CIE – II	

PROGRAMMING LANGUAGE COURSE
(Introduction to C++ Programming)

SL No.	Test Questions	M	BT	CO
1.a	Explain the different ways of initializing value to constructor accepting only one parameter.	4	L2	CO1
1.b	Explain the usage of inline functions and friend functions within a class through examples.	6	L2	CO2
2	Can public members of base class be granted public status in derived class, even if the base class is inherited as private? If so, explain how?	10	L3	CO3
3.a	Explain the usage of Static data members and Static Member functions as Static class members	4	L2	CO2
3.b	Elaborate on the behavior of constructors and destructors with sample programs and their output.	6	L2	CO1
4.	Assume two or more classes are derived from a common base class. Can multiple copies of the base class from being present in an object derived from these two or more derived classes be prevented? If so, how? Explain through example.	10	L3	CO3
5.a	Differentiate between private, public and protected base class access control mechanisms.	5	L2	CO2
5.b	How can parameters be passed to base class constructors? Explain through example.	5	L2	CO2

BT-Blooms Taxonomy, CO-Course Outcomes, M-Marks

Marks Distribution	Particulars		CO1	CO2	CO3	CO4	L1	L2	L3	L4	L5	L6
	Test	Max Marks	14	16	20	--	--	30	20	--	--	--

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DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

Date	Jan. 2024	Maximum Marks	50
Course Code	22PL15D	Duration	90 Min
Sem	I	Improvement Test	
Introduction to C++ Programming			

	Test Questions			
1	Illustrate the working of multiple catch statements while handling exceptions through relevant example.	10	L2	CO2
2a.	How can operators be overloaded using friend function? Explain with advantages.	06	L2	CO2
2b	Can an exception caught be re-thrown? If so, explain how?	04	L2	CO3
3	Design and implement a C++ program to create an abstract class - SHAPE to represent any shape in general. The class should have two pure virtual functions to read dimensions and to compute the area. Create three derived classes - CIRCLE, RECTANGLE, and SQUARE by inheriting the features of class SHAPE. Implement the functions to read and compute the area.	10	L2	CO3
4a.	Explain the concept of function overloading with its syntax.	06	L2	CO3
4b.	Discuss the importance of default function arguments in C++ programming.	04	L2	CO2
5.	Explain the role of following a. Virtual Functions b. Abstract Classes.	10	L3	CO3

BT-Blooms Taxonomy, CO-Course Outcomes, M-Marks

	Particulars		CO1	CO2	CO3	CO4	L1	L2	L3	L4	L5	L6
Marks Distribution	Test	Max Marks	-	20	30	-	-	40	10	-	-	-
	Quiz	Max Marks	-	-	-	-	6	4	-	-	-	-

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RV COLLEGE OF ENGINEERING

(An Autonomous Institution affiliated to VTU)

I / II Semester B. E. Regular / Supplementary Examinations Feb-2024

Common to all programs

INTRODUCTION TO C++ PROGRAMMING (ELECTIVE)

Time: 03 Hours *Maximum Marks: 100*

Instructions to candidates:

1. Answer all questions from Part A. Part A questions should be answered in first three pages of the answer book only.
2. Answer SIX full questions from Part B. In Part B question numbers 2 and 11 are compulsory. Answer any one full question from 3 and 4, 5 and 6, 7 and 8 & 9 and 10. Question number 11 is lab component.

PART-A

1	1.1	What is namespace? Give an example.	02
	1.2	Illustrate friend function with an example.	02
	1.3	How abstract classes are different from regular classes.	02
	1.4	What do you mean by exception handling? Give an example.	02
	1.5	Define the following: i) List ii) Map.	02

PART-B

2	a	Explain the salient features of object oriented programming.	07
	b	With an example explain the working of constructors and destructors.	07
3	a	What are inline functions? Discuss the advantages of inline functions with an example.	07
	b	Define static data members and static member functions of a class. Explain with an example.	07
		OR	
4	a	Write a note on the following: i) Interface ii) Encapsulation	10
	b	Explain the use of scope resolution operator in $C++$.	04
5	a	Write a $C++$ program to calculate the volume of different shapes with the concept of function overloading.	08
	b	Define default arguments. Explain with an example.	06
		OR	
6	a	Illustrate the working of virtual base class with an example program.	08
	b	Demonstrate the overloading of $++$ and $--$ operators using friend function.	06

7	a	Write a C++ program to demonstrate the use of multiple catch statements.	08
	b	How are functions terminate() and unexpected () different from one another?	06
		OR	
8	a	How to restrict the exceptions and rethrow the exceptions with example program for each.	10
	b	Explain the process of handling derived class exceptions.	04
9	a	Define class templates. Explain with an example program of two generic datatypes.	10
	b	Write a short note on vector class.	04
		OR	
10	a	With the help of template class program, find out the largest of three objects.	08
	b	Differentiate between Compile-time and run-time polymorphism.	06
		LAB COMPONENT	
11	a	Implement the following requirement: An electricity board charges the following rates to domestic users to discourage large conceptions of energy. 0 – 100 units : *Rs.* 1.50 per unit 101 – 200 units : *Rs.* 1.80 per unit Beyond 200 units : *Rs.* 2.50 per unit All users are charged a minimum of *Rs.* 50. If the total amount is more than *Rs.* 300 then an additional surcharge of 15% is added. The C++ program must read the names of users, number of units consumed and display the calculated charges.	10
	b	Design and implement a C++ program using class to process grocery list for a customer in a store. The list includes details such as the Name, Price of each item and operations like billing on an order.	10