

SHRI MATA VAISHNO DEVI UNIVERSITY, KATRA
School of Computer Science & Engineering
B.Tech.(CSE)Re-Minor-II Exam (Odd) 2019-20

Entry No:

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Date: 15.10.2019

CourseTitle: OOP with C++

Total Number of Pages: [02]

Total Number of Questions: [05]

Course Code: CSL2022

Time Allowed: 1.5 Hours

Max Marks: [30]

Instructions

Attempt All Questions.

Write precise answers. Write shortest answers for Q1.

Section-A

- Q1a) What are abstract classes ? How they are useful?
 b) What are the characteristics of a friend class?
 c) What is difference between pointer and a reference?
 d) Can the operator overloading be used for fundamental type data?
 e) What is the difference between virtual function and an overloaded function?
 f) What is the benefit of declaring Destructor virtual?
 g) The pointer ----- enables to call multiple functions in the same statement.
 h) What is object slicing? (1x8=8 Marks)

- Q2a) What do you mean by inline function? Explain with ex?
 b) Explain constructor & its type with example? (2+2=04 Marks)

Section-B

Q3a) **Mohit's** would like to withdraw X Rs. from an ATM. The cash machine will only accept the transaction if X is a multiple of 10, and **Mohit's** account balance has enough cash to perform the withdrawal transaction (including bank charges). For each successful withdrawal the bank charges 0.25 Rs. Calculate **Mohit's** account balance after an attempted transaction.

Input : Positive integer $0 < X \leq 5000$ the amount of cash which **Mohit** wishes to withdraw.
 Nonnegative number $0 \leq Y \leq 5000$ with two digits of precision **Mohit's** initial account balance.

Output: Output the account balance after the attempted transaction, given as a number with two digits of precision. If there is not enough money in the account to complete the transaction, output the current bank balance.

b) Write a user-defined function `AddEnd4(int A[][4], int R, int C)` in C++ to find and display the sum of all the values, which are ending with 4 (i.e., unit place is 4).

For example if the content of array is:

24 16 14

19 5 4

The output should be 42

(3+4=07Marks)

Q4) Write a function called reverseTo() that reverses a string (an array of char). Use a for loop that swaps the first and last characters, then the second and next to last characters and so on. The string should be passed to reverseTo() as an argument. Write a program to exercise reverseTo(). The program should get a string from user, call reverseTo(), and print out the result. Use an input method that allows embedded blanks. Test the program with Famous phrase, "Nothing is Permanent in this World". (04 Marks)

Q5a) WAP for an Employee Class with following: Data members: Emp_No, Emp_Name, Basic, DA, IT, net_Sal;
Member Function: to read data, to calculate Net_Sal, and to print data members. WAP to read data on N Employee & compute Net_Sal of each Employee (DA=12% of basic & Income Tax=20% of Gross Salary).

b) Discuss Operator overloading and its significance? Write a Program for overloading of index operator [] and << and >> operator with a suitable class of objects of ur own. (3+4=07Marks)

Course Outcomes

After Successful Completion of this Course, students shall be able to;

CO1: Knowledge and understanding of OOP using C++ that are new to programmers of traditional structured language like C.

CO2: Ability to write simple programs in C++ language by using basic control structures in addition to C, function overloading, constructor and destructor, run time memory allocation using new and delete etc.

CO3: Understanding the concept of OOP with C++ using classes and objects, Inheritance, polymorphism,

CO	Questions Mapping	Total Marks	Total Number of Students (to be appeared in Exam)
CO1			37
CO2			
CO3			
CO4			

SHRI MATA VAISHNO DEVI UNIVERSITY, KATRA
School of Computer Science & Engineering
B.Tech.(CSE) Major Exam (Odd) 2019-20

Entry No:

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Date: 06.12.2019

Course Title: OOP with C++

Total Number of Pages: [02]

Total Number of Questions: [06]

Course Code: CSL2022

Time Allowed: 03 Hrs

Max Marks: [50]

Instructions

Attempt All Questions.

Write precise answers. Write shortest answers for Q1.

Section-A

- Q1a) How does composition help facilitate encapsulation ?
- b) A class has a single constructor which is only visible within class what purpose might this class serve? Write some code to describe?
- c) What are member specifiers? How they are represented in class diagram
- d) What are uses of reference in functions?
- e) How do we throw polymorphically?
- f) Discuss different file organisations with example?
- g) How template is different from streams classes
- h) Should I call a destructor on a local variable ? Justify? (1.5x8=12 Marks)
- Q2a) WAP to I/p D.o.B of student call function to compute his lucky no. Add all digits of his D.o.B (15.07.70) to get single digit lucky no. (3+2=05 Marks)
- b) What is copy constructor? How many ways it can be implemented write code.

Section-B

Q3a) A new Car outlet opened its branch at Katra, it allow manager to keep records of all cars. For this they need detail of car like Manufacturer, modelname, engine no, chasisno, year of manufacture & color. Create a class with function for entering required details of cars & display output in formatted manner?

b) Write a user-defined function AddEnd5(int A[][5], int R, int C) in C++ to find and display the sum of all the values, which are ending with 5 (i.e., unit place is 5). For example if the content of array is:

25 16 15

19 6 5

21 5 7

The output should be 50

(4+3=07 Marks)

Q4a) WAP to create a file student.txt if it does not exist. If it does exist, append new data to it. Write 500 integers created randomly into file using text I/O. Integers are separated by spaces in the file. Read data back from the file & display sorted data ?

- b) WAP which read a 2-D array and then perform following operation:- i) Print sum of individual rows of 2-D array
 ii) Print Norm of a 2-D array iii) Print highest and lowest in array
 iv) Count the numbers which are greater than the highest in the array (4+4=8 Marks)

Q5a) Explain various forms of Inheritances, How they are represented in class diagram? Illustrate hybrid inheritance & its implementation along with virtual base class? its advantages?

- b) Discuss Operator overloading and its significance? List all operators which can't be overloaded & Why? Write a Program for overloading of index operator [] and << and >> operator with a suitable class of objects of ur own. (5+5=10 Marks)

Q6a) Discuss RTTI? Elaborate at least 03 functions of it with program code with detail? Describe the facilities available for dynamic memory management available in c++

- b) WAP to read contents of file in reverse order and display them on screen? (4+4=08 Marks)

CO	Questions Mapping	Total Marks	Total Number of Students (to be appeared in Exam)
CO1			81
CO2			
CO3			
CO4			