

POKHARA UNIVERSITY

Level: Bachelor

Semester : Spring

Year : 2023

Programme: BE

Full Marks: 100

Course: Object Oriented Programming in C++

Pass Marks: 45

Time : 3hrs.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Attempt all the questions.

1. a) Explain non-linear behaviour of complexity. How is OOP different from POP? Justify with points. 7

OR

Define Responsibility Driven Design. Demonstrate the significance of CRC in OOP with an example.

- b) What shortcomings of structure are solved by classes? Explain different types of constructors available in C++ with their use. 8
2. a) Does the friend function breach Data hiding? Justify. Write a program to swap the values of variables of two classes using friend function. 8
- b) How is DMA better than SMA? Justify your answer. Explain how new and delete operators are used in DMA. 7
3. a) Define static member. Write a program to illustrate the use of static members and static member function. 7
- b) How inheritance increases the reusability of codes? Explain different types of inheritance with suitable diagram and syntax. 8
4. a) What is diamond problem in inheritance? Explain how this problem can be solved with suitable programming example. 7
- b) Define two ways of converting one user defined data type to another user defined type. Write a program that convert kilogram into gram using user define to user define data conversion. (1kg=1000gm). 8

OR

WAP to find the sum of two 3×3 matrix by overloading binary operator +.

5. a) What do you mean by virtual function? Write a program to show the use of virtual function to achieve runtime polymorphism. 7

- b) Why is generic programming beneficial? Explain template function and class template with syntax. 8

6. a) Define Exception handling. Does C++ support multiple catch? Illustrate with suitable programming example. 7

- b) Write a program that stores object of student class (assume data members are roll, name and university\_name) into a file and read values from the file and display the data in console. 8

7. Write short notes on: (Any two) 2×5

a) STL

b) Use of this pointer

c) OOAD