

Tribhuvan University
Institute of Science and Technology

2079

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Bachelor Level/First Year/Second Semester/Science
Bachelors in Information Technology (BIT 153)
(Object Oriented Programming)

Full Marks: 60
Pass Marks: 24
Time: 3 Hours

Candidates are required to give their answers in their own words as far as practicable.
The figures in the margin indicate full marks.

Section A

Long Answer Questions

Attempt any TWO questions.

[2x10=20]

1. What do we need template? Why the program terminate after the occurrence of exception? Describe the types of constructor. [2+2+6]
2. Differentiate between abstract class and concrete class. Write a program to create a class named "Quadratic" that represents a function of the form $f(x) = ax^2 + bx + C$, where x is a real variable and a, b, c are real constants. The class must satisfy the following requirements. [2+8]
 - a. A constructor should be provided that takes the values of a, b and c as arguments. All three of these arguments should default to zero.
 - b. A function that takes a single argument x return the value of $f(x)$.
 - c. All data members should be private.
3. Explain the chain of constructor and destructor between sub classes and super classes during inheritance with example. Create a class named "Point" with data members x and y . Overload the $+$ operator to add the value of two objects of this class. [5+5]

Section B

Short Answer Questions

Attempt any EIGHT questions.

[8x5=40]

4. Can we use object oriented concept using structure instead of classes? Justify your opinion. [5]
5. In which case default argument is used? Describe with an example. [5]

6. What is the task of static data members and function? Illustrate with an example. [5]
7. Differentiate between aggregation and inheritance. Why do we need virtual base class?
[2 +3]
8. Define stream. How do you read the text from file? Describe. [1+4]
9. Explain the features of OOP. [5]
10. Define namespace. List any two manipulators with their uses. [1+4]
11. Why do we need friend class? How can we define member function outside the class?
[2+3]
12. Explain the use of pure virtual function with example. [5]