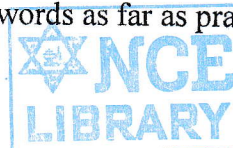


TRIBHUVAN UNIVERSITY
INSTITUTE OF ENGINEERING
Examination Control Division
2078 Chaitra

| Exam. | Regular | | |
|-------------|---------|------------|--------|
| Level | BE | Full Marks | 80 |
| Programme | BEI | Pass Marks | 32 |
| Year / Part | I / II | Time | 3 hrs. |

Subject: - Object Oriented Programming (CT 451)

- ✓ Candidates are required to give their answers in their own words as far as practicable.
- ✓ Attempt All questions.
- ✓ The figures in the margin indicate Full Marks.
- ✓ Assume suitable data if necessary.



1. What are the drawback of procedural programming and advantages of object oriented programming. With a program code differentiate between procedure object oriented programming and object oriented programming. [4+4]
2. Explain the significance of C++ language. Differentiate between C and C++. [3+5]
3. How enumerations are used in C++? What are the rules for defining identifiers in C++? Explain the need of namespace in C++ with example. [3+2+3]
4. Define copy constructor with suitable example. Write a program to illustrate the use of 'this' pointer in C++. [3+5]
5. Explain explicit constructor. Overload + operator to add two complex numbers using non-member function of a class. [3+5]
6. Explain the need of Inheritance in C++. Write a program as specified below. [2+6]
 - a) Design a class Student with data member roll no and two member function to read and display the marks.
 - b) Design a class Test that inherits the class student, consist its own data member to store marks in two subject two member function to read and display the marks.
 - c) Design a Third class Result that inherits class Test, consists data member of its own to store marks and member function to display roll no marks and total of two subject.
7. Explain different types of polymorphism. What is pure virtual function? Create an abstract class Polygon with length and height as its data members. Make area () a pure virtual function and redefine it in derived classes triangle and rectangle to calculate respective area. Your program should demonstrate run time polymorphism. [2+1+5]
8. How can you test stream errors, explain? Write a program to store information of 10 students in a file. The information to be store are registration number, name, program, contact number and address. The user must be able to access all the information of students in the file and display them in console as well. [2+6]
9. What are the uses of Class Template and Function Template? Write a program when all the template parameters are not used in function arguments. [4+4]
10. What are the advantages of exception handling over conventional error handling? Write a program that handles multiple exceptions. [3+5]

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1. What are the limitations of procedure oriented programming over object oriented programming? What is encapsulation? What are its advantages? [4+2+2]
2. What is inline function? Explain about default argument and function overloading with a suitable example. [1+2+2]
3. What do you mean by dynamic memory allocation? How you achieve it? Explain about function with default argument with example. [2+2+4]
4. Why we need to pass by reference object rather than pass by object as agreement in copy constructor? Construct a class named "Animal" with data and methods as follows:
Data: name, id_number, cost
Methods: void setdata (char, int, float); and void showdata();
Create two different objects of type "Animal". Use the method setdata (...) to set the data members' value and use the method showdata () to display them. Illustrate the use of different access specifiers in this program. [3+5]
5. Why do we need friend function? Explain which operators cannot be overloaded in C++? Explain how a Class type (user-defined type) of data can be converted to a basic data (in-built data) type? Write a program to overload greater than (>) operator to compare two Amount using the concept of operator overloading. [2+1+2+5]
6. Explain how can you say that inheritance promotes reusability. Write a program to implement multiple inheritance in C++. [4+4]
7. What are different types of polymorphism, explain? Explain the necessity of virtual function with example. [4+4]
8. Discuss about classes for file stream operator with a suitable block diagram. Explain how end of file condition is handled in C++ with an appropriate syntax. Write a program to scan the details of 5 employees and write it to file named "employee.dat". Also scan their details from that file and display it to console. [3+2+5]
9. Explain how we can use function template and class template. Write a program that default argument can be used in class template. [4+4]
10. What is the advantage of having exception handling in the program? Explain about multiple handler with a suitable example. [3+4]
