**Kathmandu BernHardt College**

**Bafal, Kathmandu**

**Pre-Board Examination -2069**

**Subject: Object Oriented Programming (202) Set-‘A’ FM: 60**

**Level: BSC CSIT 3rd Sem. Time: 3hrs PM: 24**

**Attempt any two questions**. **2×10=20**

1. What is object oriented programming paradigm? List its features? Differentiate between object oriented programming paradigm and procedural oriented programming paradigm.
2. What is constructor? Explain different types of constructor with suitable examples.
3. Define a **student** class (with necessary constructors and member functions) in Object Oriented Programming (abstract necessary attributes and their types). (Write a complete code in C++ programming language).

Derive a **computer Science and Mathematics** class from **student** class adding necessary attributes (at least three subjects).

Use these classes in a main function and display the average marks of computer science and mathematics students.

**Attempt any eight questions:** 8**×5=40**

1. Explain access specifiers: private, public and protected in terms of inheritance.
2. What is function overloading? Explain with suitable example.
3. What is type casting? Explain with suitable C++ program.
4. Write a program to find largest item from array using template function.
5. What is pure virtual function? Explain with suitable examples.
6. What is recursion? Write a program to find GCD of two numbers using recursion.
7. Explain about “this” pointer with suitable example.
8. Write a program to add two distance using operator overloading. Assume class distance have data member feet and inches.
9. What is member function? How member function of a class can be defined? Explain with suitable example.
10. What is exception handling? Write a program with multiple catch statements.

**GOOD LUCK**

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**Subject: Object Oriented Programming (202) Set-‘B’ FM: 60**

**Level: BSC CSIT 3rd Sem. Time: 3hrs PM: 24**

**Attempt any two questions: (2×10=20)**

1. Explain in detail the following principles of OOP.
2. Object ii. Class iii. Data encapsulation and data hiding
3. Inheritance v. Polymorphism
4. What do you mean by inheritance? Explain different types of inheritance with derivation syntax.
5. Create Define a class time with data member hours, minutes and seconds. Use constructor (default, parameterized and copy constructor) to initialize the objects. Also used member function gettime () to read time , member function sum() to add two time and return time, and friend function showtime () to display time in appropriate format. Also overload unary operator ++ to increment time by 1 second.

**Attempt any eight questions: (8×5=40)**

1. Explain the exception handling mechanism with suitable example.
2. What is function overloading? How it differ from overriding.
3. What is copy constructor? Explain with suitable example.
4. What is the role of private, protected and public access specifier?
5. What is abstract base class? How can you make a class abstract? Explain with example.
6. What is a pointer? Write a program to return object using this pointer.
7. What is friend function? What are the merits and demerits of using friend function?
8. Write a program to convert polar coordinates into rectangular coordinates.
9. What is inline function? Write a program to find the volume of box using inline function.
10. What is generic programming? Write a generic function to sort an array of elements.

**GOOD LUCK**