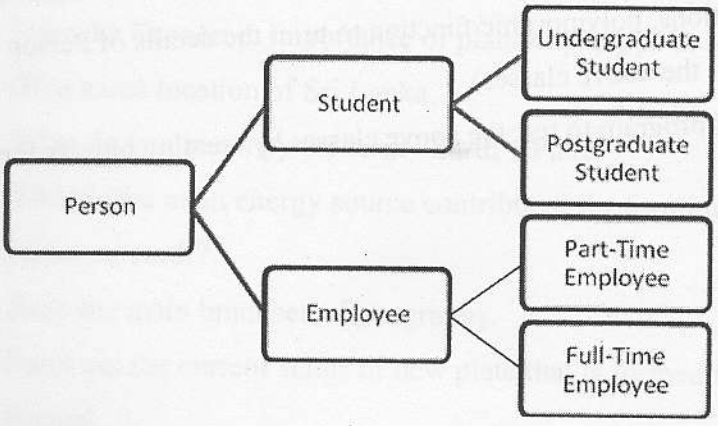
EASTERN UNIVERSITY, SRILANKA
DEPARTMENT OF MATHEMATICS

EXTERNAL DEGREE EXAMINATION IN SCIENCE - 2008/2009
SECOND YEAR, SECOND SEMESTER (Jan. /Apr., 2011)

EXTCS153 – Practical work on Object Oriented Programming Techniques

Time: 2 Hours

Consider the following class hierarchy:



Person is a base class with attributes Name, age and address.

Student class has extra fields **index number** (which is in the format of **LL0000** where **L** denotes letter and **0** denotes a number) and **Year of Study**. Undergraduate Students has attribute **Mode of Study** (internal or External) and Postgraduate students has attribute **First degree Stream**.

Employee has special attributes **Employee Number, Designation** and **Date of appointment**. Part-time employee has attributes **Hourly-Rate** and **No of Hours worked** and an Full-time employee has attributes **Salary.**

The class full-time Employee contain the additional method **getSalary()** to display the monthly salary **msalary**

Where

msalary = salary – deduction

and deduction is calculated as follows

If the **salary** is greater than 50000 then **deduction** is 10% of **salary**

If the **salary** is less than or equal to 50000 then **deduction** is 5% of **salary**

The class Part-time Employee contain the additional method **getSalary()** to display the monthly salary **msalary**

Where

msalary = Hourly-Rate * No of Hours worked

- Implement the above classes in C++

  (Include default constructors, destructors, access functions, virtual functions, setter and getter functions, polymorphic function to print the details of Person and other functions required for the above classes)
- Write a test program to test the above classes by creating objects for each child classes.