



# ELIZADE UNIVERSITY

## ILARA-MOKIN

**FACULTY:** BASIC AND APPLIED SCIENCES  
**DEPARTMENT:** MATHEMATICS AND COMPUTER  
SCIENCE

**1<sup>st</sup> SEMESTER EXAMINATION**  
**2018 / 2019 ACADEMIC SESSION**

**COURSE CODE:** CSC 303

**COURSE TITLE:** Objects Oriented Programming

**COURSE LEADER:** Dr. Festus Ayetiran

**DURATION:** 2 Hours

**HOD's SIGNATURE**

**INSTRUCTION:**

Candidates should answer any **THREE** Questions.

Students are warned that possession of any unauthorized materials in an examination is a serious assessment offence

Students are permitted to use **ONLY** a scientific calculator.

1. (a) Discuss the object-oriented programming paradigm. Why is it different from the procedural programming paradigm?
- (b) Write a program containing a superclass and subclass(es) to illustrate the principle of inheritance.
2. (a) With adequate examples, compare and contrast the implementation of encapsulation in Python and Java.
- (b) Write a program using any real-life example to illustrate the principle of abstraction.
3. (a) In the context of OOP, explain the term inheritance.
- (b) Consider the program below and present a detailed explanation in the perspective of OOP of what it is all about.

```

class Animal:
    def __init__(self, name):
        self.name = name
    def talk(self):
        raise NotImplementedError("Subclass must implement abstract method")
class Cat(Animal):
    def talk(self):
        return 'Meow!'
class Dog(Animal):
    def talk(self):
        return 'Woof! Woof!'
animals = [Cat('Missy'), Cat('Mr. Mistoffelees'), Dog('Lassie')]
for animal in animals:
    print animal.name + ': ' + animal.talk()

```

4. (a) Differentiate between a method and a class.
- (b) Write a program with four classes named "Person", "Lecturer", "Student" and "Postgrad". The "Person" class is the parent class with following attributes: "firstname", "surname" and "identification\_number". The subclasses "Lecturer" and "Student" have attributes "Courses\_Taught" and "enroll" respectively. A "Postgrad" shares the attributes of both "Lecturer" and "Student" in that he/she enrolls in a course and can be a teaching assistant where he/she teaches also. Incorporate the entire scenario above in your program.
- (c) What principle of OOP best describes the above scenario?
5. (a) What is method binding?
- (b) Explain two types of method binding. Buttress your points with examples of each.
- (c) Differentiate between method overloading and overriding
- (d) State 3 rules of method overriding in Java.