

ZIMBABWE EZEKIEL GUTI UNIVERSITY



FACULTY OF SCIENCE, TECHNOLOGY, AGRICULTURE AND FOOD SYSTEMS
DEVELOPMENT

Department of Information Systems

Module: DIS124

Name: Object Oriented Programming (Java)

Duration: 3 hours

Date: 2024 11 FEB 2025

Instructions

- (i) Attempt all questions, the mark allocation for each question is shown in square brackets.
- (ii) Number your answers accordingly.
- (iii) The total marks for the examination is 100.
- (iv) The Examination consists of Section A and Section B
- (v) Answer any **three** Questions from Section B
- (vi) Write your answers of section A in answer booklet provided

- (vii) Write your answers of section B on your computer under one folder

Section A – Theory Question –[40 marks]

Question One

- a) What is the effect of a final access modifier when applied to each of the following units in java;
- i) class
 - ii) method
 - iii) instance variable
 - iv) static variable
- [8 marks]
- b) Define inheritance and explain all types of inheritance that are supported by Java. [12 marks]
- c) Enumerate the Rules for creating Identifiers in Java. [6 Marks]
- d) Write a program segment to demonstrate how to overload a constructor in Java [8 marks]
- e) Compare and contrast overloading and overriding in OOP. [6 Marks]

Section B- Practical Questions- [60 marks]

Answer any three questions from section B

Question two

Write a Java program to create a class called Programmer with instance variables workDuration and ChargePerHour. The class should implement getters and setters. Add a method that will calculate a Programmer's charge which is given by callDuration * ChargePerHour. Create two objects (Programmers) namely Tinevimbo and Tinerufaro. Determine and display their work charge for a given period.

[20 Marks]

Question three

Create a class named EMoney with a method called con() that connects the application to a mySQL database and another method update() for updating a record in mySQL table and method show() for showing records from mySQL table. The

program must create an object called easyPay, connect the program to a mySQL database and allow user to update a record and display the records into and from the table respectively. [20 Marks]

Question four

Write a Java application program to create a class called Calculator with member variables num1 and num2 and an overloaded method called calculate() to perform arithmetic addition and multiplication respectively. The program must create two objects (add) and (multiply) to calculate and display the result of two numbers entered via a default constructor. [20 Marks]

Question five

Write a program to create a class called SuperOfSuper, with a method reveal that shows the name of person. The program must have a sub class Super that overrides the SuperOfSuper's method. Another class Child overrides the Super's inherited method. Create a single object (person) of type Child that displays the person's name. [20 Marks]