ZIMBABWE EZEKIEL GUTI UNIVERSITY

FACULTY OF HEALTH, SCIENCE AND TECHNOLOGY

Department of Digital Technology

Module: CDT204 OOP

Exam Duration: 4 hours

August End of Semester Examination 2021

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24 AUG 2021
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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

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Section A – Theory Question –[40 marks]

Question One

a) Define instantiation and describe how you can instantiate an object from a class [4 Marks]

b) Write a program segment to illustrate how an exception can be handled in Java [7 Marks]

c) Write short notes on the following in relation to object oriented programming

i) constructor

ii) encapsulation

iii) method overriding [9 marks]

e) Write a program segment to show how the following can be done in Java;

i) Declaring a constant in java [4 Marks]

ii) Declaring a constructor [5 Marks]

f) Differentiate between run time polymorphism and compile time polymorphism [6 marks]

g) Determine the output of the following Java statements.

i. System.out.println(40<<2);
ii. System.out.println(40<<3);
iii. System.out.println(20>>2);
iv. System.out.println(30>>2);
v. System.out.println(30>>3) [5 marks]

Section B- Practical Questions- [60 marks]

Answer any three questions from section B

Question Two

Write an application program to create a class called **CarInsurance** with member variables **TermCost** and **numberOfTerms** and overloaded method called **subscriptionCost()** to calculate the subscription for full cover and third party insurance schemes. The program must create two objects and display the cost of the full cover and third party schemes. **[20 Marks]**

Question three

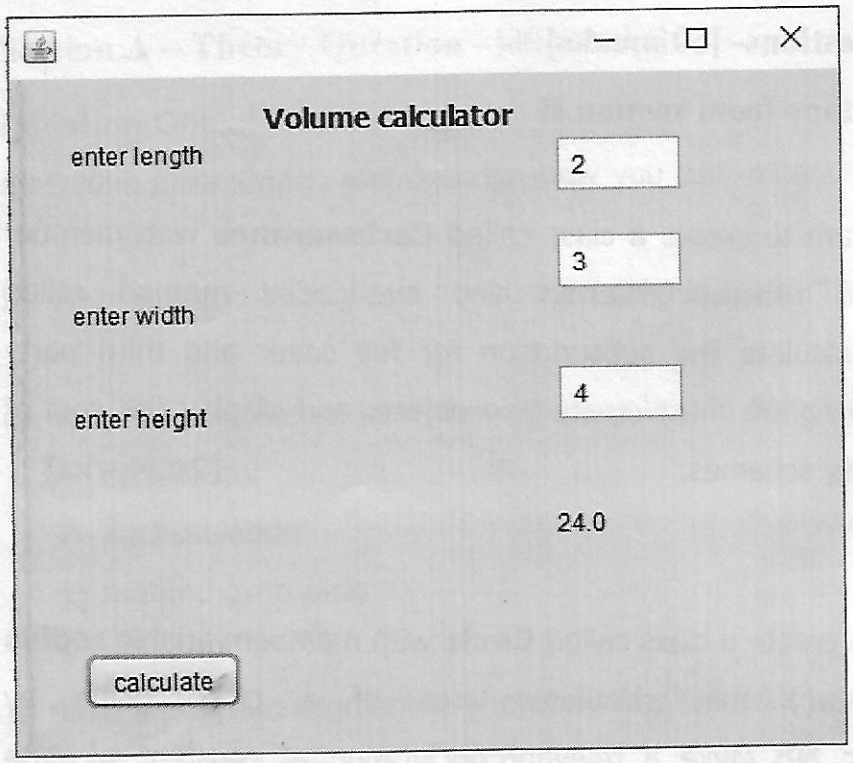
a) Write a program to create a class called **Circle** with member variable **radius** and method **area()** that calculates area of a circle given by **pi*radius*radius.** **Nb** Make a relevant declaration of constant **pi**. The program must allow the user to enter the value of radius and display the area. **[20 Marks]**

Question four

Code a java application program that defines an interface called **Greeting** with method called **welcome**, a class named **CDT204** will implement the interface and defines the method in the interface to display the message **"Welcome to Java programming".** Create an object of type **CDT204** named **Java** and invoke the method defined in the class. **[20 Marks]**

Question five

The volume of object x is calculated as :v=length*width*height.Design an interface below and add functionality to determine the volume of object x. [20 marks]


Volume calculator
enter length
2
3
enter width
4
enter height
24.0
calculate