UGANDA MARTYRS UNIVERSITY

FACULTY OF SCIENCE
DEPARTMENT OF COMPUTER SCIENCE AND INFORMATION SYSTEMS

END OF SEMESTER FINAL ASESSMENT

2021/22

FIRST YEAR EXAMINATION FOR BSCIT, BSCCS, BSC GENERAL

OBJECT ORIENTED PROGRAMMING IN JAVA

COURSE CODE: CSC1202

DATE: 18th July 2022

TIME: 9:30 am – 12:30 pm

DURATION: 3HRS

Instructions:

1. *Carefully read through ALL the questions before attempting*
2. ***Section A** is compulsory*
3. *Attempt **ANY THREE (3)** Questions from **Section B***
4. *No **names** should be written anywhere on the examination book.*
5. *Ensure that your **Registration Number** is indicated on all pages of the examination answer booklet.*
6. *Ensure your work is **clear** and **readable**. Untidy work shall be penalized*
7. *Any type of examination Malpractice will lead to automatic disqualification*
8. *Do not write anything on the questions paper.*

SECTION A (40 MARKS)

QUESTION ONE

a) Why is java referred to as an Object-Oriented Programming language?   2 marks

b) Besides Java name three other object-oriented programming languages?   3 marks

c) Explain any four concepts of object-oriented programming.   8 marks

d) Describe any three types of Java Applications.   6 marks

e) Explain the two components of a Java class with an example.   2 marks

f) Describe an IDE. Name any two IDEs that are used to write Java programs.   4 marks

g) Develop a Java program to implement the following algorithm: 15 marks

Class Tax:

> Fields: Integer Rate
>
> > String Category
>
> Methods: SetRate (integer rt)
>
> > > assign rt to Rate
> >
> > SetCategory (String cat)
> >
> > > assign cat to Category

Class Client inherits Tax:

> Fields: Integer Year
>
> > String CName
>
> Methods: SetYear (integer yr) –assign yr to Year
>
> > SetName (String clt) –assign clt to CName
> >
> > Show(String clt) –Show on screen the Client Name, Year, Rate and Category

Class Billing:

> Create the main function:
>
> > Create an object ClientOne of Client Class
> >
> > > - "Set the Rate = 18, :Catetory" = Retailer, Year=2017, and CName = "James"
> > > for ClientOne
> > >
> > > - Display the details of ClientOne on the screen.

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SECTION B (60 MARKS)

QUESTION 2

a) Explain the use of the *new* keyword in java programming. 4 marks

b) What is the purpose of '+' in relation with Strings in java? 2 marks

c) Differentiate between *continue* and *break* as used in java loops. 4 marks

d) Write a java method which grade a student a passed with a mark of 50 and above. Otherwise, it should grade the student as having failed. The method should accept an integer value and return the grade in form of a string. 10 marks

QUESTION 3

a) Explain the use of the following statement in Java programs. 3 marks each

  i.   String UName = new String ("UMU");

  ii. Boolean X;

b) What is the purpose of each of the following String functions: 3 marks each?

  i.   charAt(index)

  ii. contains(String)

  iii. equals(String)

c) Write a java program to demonstrate a While loop. 5 marks

QUESTION 4

a) Write a Java program that displays all multiples of 5 less than 10000. 10 marks

b) Write a Java program that displays odd numbers between -20 and 1000. 10 marks

QUESTION 5

a) Write short notes about four classes in the swing package. 8 marks

b) Write java code to display the screen below: 12 marks