TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

UNIVERSITY EXAMINATION FOR:

BMCS/SEP2016/J-FT

BSSC/SEP2016/J-FT

EIT 4205: OBJECT ORIENTED PROGRAMMING II

SPECIAL/SUPPLEMENTARY EXAMINATION

SERIES: SEPTEMBER 2018

TIME: 2 HOURS

DATE: Sep 2018

Instructions to Candidates
You should have the following for this examination
-*Answer Booklet, examination pass and student ID*
This paper consists of **FIVE** questions. Attempt question ONE (Compulsory) and any other TWO questions.
Do not write on the question paper.

Question ONE (30 Marks)

a) List any five features of Java   (5 Marks)

b) Describe the three types of variables used in a class citing an example for each   (6 Marks)

c) State and explain the usage of any three access modifiers in java programming language.   (6 Marks)

d) List four types of Exceptions   (4 Marks)

e) State and explain the usage of any three access modifiers in java programming language.   (6 Marks)

f) State four differences between Java applications and Java applets programming.   (3 Marks)

Question TWO (20 Marks)

a) Distinguish between abstract classes and interfaces   (4 Marks)

b) Explain the difference between the AWT components and the Swing Components using examples   (6 Marks)

c) Differentiate between the following layout managers   (6 Marks)
      i.   GridLayout
      ii.   BorderLayout
      iii.   FlowLayout

d) Using a code snippet show how to set the layout of a user interface.   (4 Marks)

Question THREE (20 Marks)

a) Explain the procedure for converting an applet to an application.   (6 Marks)

b) State and briefly describe the four methods that define the structure of an Applet.   (8 Marks)

c) Write an applet that displays the string "This is my first applet" on a web browser on clicking a button.   (6 Marks)

Question FOUR (20 Marks)

a) Write a program in java that accepts two user input numbers: number1 and number2, the program then compares the two numbers and outputs: number1 equals number2 or number1 is less than number2 or number1 is greater than number2 depending on the outcome.   (5 Marks)

b) Write a program in java that accepts a user input number and checks if the number is even or odd; the program then outputs the appropriate message.   (4 Marks)

c) Use an if-else statement to write a program in Java that awards students grades based on the following guidelines; A = 70-100, B = 60 – 69, C = 50-59, D = 40-49, F = 0-39. The program should request the user to input the mark attained by the student, and should return "an invalid input" error in case the user tries to input any value that is not in the range 0-100.   (6 Marks)

d) Write a recursive program that accepts a user input number and calculates the factorial of the number.   (5 Marks)

Question FIVE (20 Marks)

a) Describe any three types of Java Programs   (6 marks)

b) Explain any two benefits of multithreading in computer programs   (4 marks)

c) Distinguish between constructors and destructors and explain how Java implements destructors.   (4 marks)

d) Explain the role played by each of the following objects: (6 marks)

      i.   Event object
      ii.   Source object
      iii.   Listener object