TECHNICAL UNIVERSITY OF MOMBASA

SCHOOL OF BUSINESS

DEPARTMENT OF MANAGEMENT SCIENCE

UNIVERSITY EXAMINATION FOR:

BBIT Y2SI SEP 16/J-FT, S-FT

EIT 4108: FUNDAMENTALS OF OBJECT ORIENTED

PROGRAMMING

SPECIAL/SUPPLEMENTARY EXAMINATION

SERIES: SEPTEMBER 2018

TIME: 2HOURS

DATE: Sep2018

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

Section A (30 Marks) – Compulsory

Question One

a) Define the following object-oriented paradigm concepts

   i).   Inheritance **(2 Marks)**

   ii).   Package **(2 Marks)**

   iii). Data Encapsulation **(2 Marks)**

   iv). Polymorphism **(2 Marks)**

b) List three instances when a method returns to the code that invokes it **(3 Marks)**

c) With the aid of an example, show how constants are defined in java **(1 Mark)**

d) Generally, method declarations in the Java programming language will consist of six components. With the aid of an example, list five components of the method declaration

(6 Marks)

e) Differentiate between a public modifier and a private modifier in relation to fields and classes **(4 Marks)**

f) Differentiate between fields, local variables and parameters, as used in the Java programming language **(6 Marks)**

g) Define the term exception as used in the Java programming language **(2 Marks)**

Section B (40 marks) – Answer any Two Questions

Question Two

a) Extensively discuss the advantages of the object-oriented programming paradigm

(8 Marks)

b) Using an example, list five components that may be included when declaring a class in the Java programming language **(6 Marks)**

c) Write a program segment that clearly illustrates method overloading using two methods in the Java programming language **(6 Marks)**

Question Three

a) Generally, an interface declaration consists of five components. With the aid of an example, list the five components. **(6 Marks)**

b) List three members of a super class **(3 Marks)**

c) Distinguish between method overloading and method overriding **(4 Marks)**

d) In what circumstances is the **super** keyword used in the Java programming language **(2 Marks)**

e) List three other names for a subclass **(3 Marks)**

f) List two other names for a super class **(2 Marks)**

Question Four

Employee Class) Create a class called Employee that includes three instance variables—a first name (type String), a last name (type String) and a monthly salary (double). Provide a constructor that initializes the three instance variables. Provide a set and a get method for each instance variable. If the monthly salary is not positive, do not set its value. Write a test application named EmployeeTest that demonstrates class Employee's capabilities. Create two Employee objects and display each object's yearly salary. Then give each Employee a 10% raise and display each Employee's yearly salary again. **(20 Marks)**

Question Five

a) An I/O stream can represent different kinds of sources and destinations. List four of these sources and destinations. **(4 Marks)**

b) A sample file named verse.txt contains the following text

In Xanadu did Kubla Khan,A stately pleasure-dome decree:Where Alph, the sacred river, ran Through caverns measureless to man Down to a sunless sea.
Write a program in Java that uses character streams to copy verse.txt into another file called outputagain.txt **(16 Marks)**