TECHNICAL UNIVERISTY OF MOMBASA

Faculty of Engineering & Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

UNIVERSITY EXAMINATION FOR:
BACHELOR OF SCIENCE IN MATHEMATICS & COMPUTER SCIENCE (BSMC)

EIT 4250: OBJECT ORIENTED PROGRAMMING

END OF SEMESTER EXAMINATION
SERIES: DECEMBER 2013
TIME: 2 HOURS

Instructions to Candidates:
You should have the following for this examination
- *Answer Booklet*

This paper consists of **FIVE** questions.
Attempt question **ONE (COMPULSORY)** and any other **TWO** questions
Maximum marks for each part of a question are as shown
This paper consists of **THREE** printed pages

Question One (Compulsory)

a) Define the following terms:
   (i) Encapsulation **(2 marks)**
   (ii) Inheritance **(2 marks)**

b) Explain the concept of polymorphism as used in object oriented programming (OOP) **(4 marks)**

c) Outline TWO advantages and disadvantages of OOP **(4 marks)**

d) Identify TWO resources for creating Java Program **(2 marks)**

e) Explain the general structure of a Java Source code **(6 marks)**

f) State FOUR goals for Java **(4 marks)**

g) Explain the program below and then indicate the output.

```
Public class Away Assign
Public Static Void main (String [ ] args)
{
int [ ] num = new int [3];
num [0] = 10;
num [1] = 20;
num [2] = 30;
system.out.print (“The numbers are:”);
for (int 2 = 0; i<num.length:++2)
{
system.out.print ln (num [i]);
            }
    }

}
```

Question Two

a) Explain FOUR reasons why Java is popular **(8 marks)**

b) Describe TWO permissible styles of comments in the Java programming language **(4 marks)**

c) List FOUR primitive types of data provided by Java programming language **(4 marks)**

d) Outline the syntax for method declaration **(4 marks)**

Question Three

a) Explain the THREE types of errors that can be found in Java program **(6 marks)**

b) Distinguish between Java applets and Java Program **(4 marks)**

c) Rewrite this code to use the DO..WHILE statement with correct Java syntax

```
int n = 1
while (n < =5)
sum = sum +n
++n;
```

(3 marks)

d) Rewrite the above code (c) using for.next statement **(3 marks)**

e) Identify the main difference between a variable and a constant **(4 marks)**

Question Four

a) (i) Explain the following program code class stud in for {

```
string name
string id;
String class code;
void print Database {
```

```
system.out.println (name “”+id+””+(clss code);
}
}
```
(4 marks)

(ii) Create another class called student details which contains the main ( ) method. The method should call print Details method by creating the instance of class studinfo called student which should contain details of a student as follows

```
studet.name = “Albert”;
student.id = “0208”;
student.classcode = “AD01”;
```
(4 marks)

b) Define the term “array” **(2 marks)**

c) Use an array to get the total marks of 5 students **(6 marks)**

d) State the syntax used when dealing and creating a two-dimensional array. **(4 marks)**

Question Five

a) Given the following requirements specification, develop a program using Java that models a program solution. A university college requires a program that would assist the examination department capture the following students details, studAdmin no, Augseorc And Grade. The program reads the details for each student and computes his/her grade according to the following Criteria

Average score (%)	Grade
80% - 100%	A
70% or above	B
60% or above	C
50 or above	C
Below %50%	E

(10 marks)

b) Discuss java program flow control approaches giving examples of the relevant control statements.