

QUESTION ONE [30 MARKS]

- a) Discuss on Data Abstraction and Encapsulation (4 marks)
- b) What are Separators, Discuss any FOUR separators in java. (6 marks)
- c) Enumerate the Rules for creating Identifiers in Java . (5 marks)
- d) Discuss various relational operators, logical operators and their usage. (5 marks)
- e) What is an array? Illustrate how arrays may be declared (4 marks)
- f) The following is snippet code of simple java program. Explain in depth the meaning of each and every line of code (6marks)

```
/*
This is a simple Java program.
Call this file "Example.java".
*/
Public class Example
{
Public static void main( String arg[])
{
// Your program begins with a call to main().
System.out.println("This is a simple Java program.");
}
}
```

QUESTION TWO [20 MARKS]

- a) Using Switch statements, implement ATM operations (6marks)
- b) Write a program to convert the given temperature in Fahrenheit to Celsius using the following formula $C=(F-32)/1.8$ (6marks)
- c) Explain any two derived data type in Java Programming (4marks)
- d) Explain the following controls statements (4marks)
 - i. While statements
 - ii. do -while statements

QUESTION THREE [20 MARKS]

- a) Explain Exception handling in Java (2 marks)
- b) Briefly explain various features of Java as considered real object oriented. (4 marks)
- c) As a programmer write a program to calculate the compound interest in (4 marks)
- d) Using syntax and a diagram explain for loop in java (4 marks)
- e) Using appropriate diagram explain Inheritance concept of OOP (6 marks)

QUESTION FOUR [20 MARKS]

- a) Kenya Power and Lighting Company has hired you as a programmer. Your task is to come up with an automated system for Billing. Write a simple program in Java that will provide an Electricity Billing solution (10 marks)
- b) Explain the Structure of Java Program (5 marks)
- c) List and explain any Five benefits of object oriented programming. (5 marks)

QUESTION FIVE [20 MARKS]

- a) Write a program to provide a solution for a payroll systems of the University staff (10 marks)
- b) Write a program that displays a 4 x 4 multiplication table on the screen (10 Marks)