(6)

UNIVERSITY OF KABIANGA

UNIVERSITY EXAMINATIONS

2017/2018 ACADEMIC YEAR

THIRD YEAR FIRST SEMESTER EXAMINATION

FOR THE DEGREE IN BACHELOR OF INFORMATION SCIENCE AND KNOWLEDGE MANAGEMENT

COURSE CODE: ISK 342

COURSE TITLE: OBJECT ORIENTED PROGRAMMING

DATE: 8TH FEBRUARY, 2018 **TIME: 2.00 P.M - 5.00 P.M**

INSTRUCTIONS TO CANDIDATES

- SEE INSIDE

THIS PAPER CONSISTS OF (5) PRINTED PAGES **PLEASE TURN OVER**

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KABIANGA UNIVERSITY
EXAMINATION PAPER
ISK 342: OBJECT ORIENTED PROGRAMMING

DECEMBER 2017

TIME: 2 HOURS

INSTRUCTIONS: ATTEMPT QUESTION ONE (COMPULSORY) AND ANY OTHER TWO

QUESTION ONE (30 marks)

a. Define the following terms as used in programming. **(6 marks)**
   i. Object
   ii. Method
   iii. Class

b. List any four points to remember about identifiers in Java Programming **(4 marks)**

c. Java programming language supports inclusion of comments. Explain two types of such comments by using an example. **(4 marks)**

d) Discuss the rules one needs to keep in mind while overriding in Java. **(4 marks)**

e) The following program is a simple example that demonstrates relational operators in java. What will be the output after it is compiled? **(5 marks)**

```
public class Test {
public static void main(String args[]) {
int a = 10;
int b = 20;
System.out.println("a == b = " + (a == b) );
System.out.println("a != b = " + (a != b) );
System.out.println("a > b = " + (a > b) );
System.out.println("a < b = " + (a < b) );
System.out.println("b >= a = " + (b >= a) );
System.out.println("b <= a = " + (b <= a) );
}
}
```

Write a simple Java program that will add and multiply the following two integer variables (a= 10, b= 20). The program should display the results.

(7 marks)

QUESTION 2 (20 marks)

a. Explain the three types of variables found in Java Programming. **(6 marks)**

b. Define abstraction as used in Java. **(2 marks)**

c. What will be the output for the following while loop when it is executed. **(5 marks)**

```
public class Test {
public static void main(String args[]) {
int x = 10;
while( x < 20 ) {
System.out.print("value of x : " + x );
x++;
System.out.print("\n");
}
}
}
```

d. Define an Applet and clearly distinguish between an applet and a standalone Java application. **(7 marks)**

QUESTION 3 (20 marks)

a) Discuss the following object oriented concepts as used in Java. **(6marks)**

i) Encapsulation
ii) Polymorphism
iii) Inheritance

b) Write an if ...*else if*...*else* statement which will be used to test the performance of a student against various conditions and output the results. Assume the student scored 30 marks. The conditions are as follows: **(7 marks)**

ark	Remark
70 and above	The performance is Excellent
>50 and <70	The performance is Average
<50	The performance is Poor
None of the above	The mark is invalid

c) Write a Java program using a switch statement which will output a grade and give a comment based on the grade scored. Assume the grading system is as follows:

(7 marks)

A- Excellent
B- Well done
C- Well done
D- You passed
F – Better try again
Default- Invalid grade

QUESTION 4 (20 marks)

a) All variables used in any program should be associated with their respective data types. Explain any four primitive data types used in java. **(4 marks)**

b) List and explain any three main Access Control Modifiers in a class declaration that are used in Java Programming. **(6 marks)**

c) Explain five reasons as to why object oriented programming in Java is gaining more popularity as compared other languages. **(5 marks)**

d) **min() Method** in java returns the smallest value among a list of arguments. Write a simple program which will return a smaller number between these two numbers (54,67)

(5 marks)

QUESTION 5 (20 marks)

a. Java provides a rich set of operators to manipulate variables. Explain at least three types of operators and give an example for each **(6 marks)**

b. Write a Java program containing the Employee class with four instance variables - name, age, designation and salary. Assign values to these variables and display the results. **(8 marks)**

e. Java provides a data structure, the array, which stores a fixed-size sequential collection of elements of the same type. Write a program which will create an array called myList with four elements (19,29,34,35) and print out the array elements. **(6 marks)**