GREENLAWNS HIGH SCHOOL

FINAL EXAMINATION FOR THE ACADEMIC YEAR 2022-2023

COMPUTER APPLICATION   MARKS : 100

STD I X   TIME : 2 HRS

You will not be allowed to write during the first 10 minutes.
This time is to be spent in reading the question paper.
The time given at the head of this paper is the time allowed for writing the answers.

This paper is divided into two Sections.
Attempt all questions from Section A and any four questions from Section B.
The intended marks for questions or parts of questions are given in brackets[]

(SECTION A)

(Attempt all questions)

Question 1. Multiple Choice Question.   (20)

i. Which of these is a looping statement in Java.

 a. break   b. continue   c. for()   d. If()

ii. Which keyword is used for accessing the features of a package?

a. import   b. extends   c. export   d. package

iii. The break statement in Java is used to

   a. Terminate from the loop immediately
   b. Terminate from the program immediately
   c. Skip the current location
   d. All of these

iv. Which class in Java is used to take input from the user?

   a. Scanner b. Input c. Applier d. None of these

v. What is the default value of boolean?

   a. true   b. False   c. '1'   d. '0'

vi. What is the default size of int?

a. 1 byte   b. 2 bytes c. 4 bytes   d. 8 bytes

vii. JDK stands for

    a. Java development Kit
    b. Java deployment kit
    c. JavaScript development kit
    d. None of these

viii. Character data type cannot store

    a. Special character
    b. Digit
    c. String
    d. Letter

ix. The real number (float number) can take how many decimal numbers?

   a. 15   b. 10   c. 7   d. 14

x. Modulus operator % can be applied to which of the following data type?

a. Integers   b. Floating point numbers

c. Both Integers and floating point numbers   d. None of these

xi. Decrement operator, decreases the value of variable by

   a. 0   b. 1   c. 3   d. 4

xii. Which of these has highest precedence?

   a. ()   b. ++ c. *   d. >>

xiii. Which of these has lowest precedence?

a. Logical operator   b. Relational operator

c. Assignment operator   d. Postfix operator

xiv. What is the output of any logical operation in Java?

a. 1 or 0   b. True or false

c. char/String   d. none of these

xv. Ternary operator can be used in place of

a. if else statements   b.. while, do while loops

c. for loop   d. all of these

xvi. In Java I/O is used to process

a. input   b. output

c. both a and b   d. none of these

xvii. What is the output of the following Java code

```
boolean b=true;
b=!b;
System.out.println( b);
```

a. true   b. false   c. compiler error   d. none of these

xviii. Which loop executes the body of the loop at least once?

a. do while loop   b. while loop   c. for loop   d. none of these

xix. When the number of iterations is finite, you will use …………. loop

a. do while loop   b. for loop   c. while   d. mixed loop

x. A method in Java is …………….. by default

a. private   b. public   c. protected   d. open

Question 2.

    a. Name any 4 tokens of Java.   (2)

    b. Write an expression in Java for   (2)

$$x + \sqrt{a^2 + b^2}$$

    c. What is the result produced by   (2)

        2-10*3+100/11   (Show the steps)

    d. int x=20, y=10, z   ·(2)

      What is the value of z

      Z = + + y * (x- -) - y

    e. What will be the output of the following code   (2)

```
double x=7.87;
System.out.println(Math.ceil(x));
System.out.println(Math.floor(x));
```

    f. What will be the output of the following program segment?   (2)

     i. int a=0;

```
   if(a>0&&a<20)
      a++;
   else
      a - -;
 System.out.println(a);
```

  ii.   int a=5,b=2,c;

```
      if(a>b||a!=b)
         c = + + a + - -b;
      System.out.println(c+ " "+ " "+b);
```

g. i. Find the error in the following code fragment: (1)

int a;

System.out.println(a);

ii. What is the return type of the (1)

Math.round() function if the parameter is float data type?

h. Name the type of error in each case given below: (2)

i. Missing semicolon

ii. Multiplication Operator used when the operation should be Division.

iii. Division by a variable that contains a value of zero.

i. What is infinite loop? Write an infinite loop statement. (2)

j. State one similarity and one difference between while and for loop. (2)

(SECTION B)

(Answer any four questions from this Section)
The answers in this section should consist of the programs in either BlueJ
<u>environment</u> or any program environment with Java as the base.
Each program should be written using variable description/mnemonic codes so
that the logic of the program is clearly depicted.
Flowcharts and algorithms are not required.

Question 3. Write a program to display the given pattern (use for loop)   (15)

```
1 1 1 1 1

2 2 2 2 2

3 3 3 3 3

4 4 4 4 4

5 5 5 5 5
```

Question 4. 1   4   9   16   25.........................100   (15)

Write a program to print the above series.

Question 5. Write a program to accept a number, check and display whether it is a spy number or not. (A number is spy if the sum of its digits equals the product of its digits)   (15)

For example

1124 sum of its digits 1 + 1 + 2 + 4 = 8 product of its digits 1 * 1 * 2 * 4 = 8

Question 6. A library charges fine for books returned late. Following are the fines

First 5 days   : 40 paise per day

6 to 10 days   : 65 paise per day

Above 10 days : 80 paise per day

Design a program to calculate the fine assuming that a book is returned N days late. (15)

Question 7. Write a program using switch and break statements which accepts a number from keyboard and displays corresponding day.

for example one for Sunday 2 for Monday and so on. It should also display error message for wrong input. (15)

Question 8. To foster a sense of water conservation, the water department has an annual water conservation tax policy. The rates are based on the water consumption of the consumer. The tax rules are as follows: (15)

Water consumed (in gallons)	Tax rate in rupees
More than 45 but 75 or less	475.00
More than 75 but 125 or less	750.00
More than 125 but 200 or less	1225.00
More than 200 but 350 or less	1650.00
More than 350	2000 0.00

Write a program to calculate the amount payable by the consumer.