DELHI PUBLIC SCHOOL NEWTOWN
SESSION 2020-2021
HALF YEARLY EXAMINATION (ONLINE)

CLASS: IX **FULL MARKS: 60**
SUBJECT: COMPUTER APPLICATIONS **TIME: 1 $\frac{1}{2}$ HOURS**

Instructions:

- **All questions are compulsory.**
- **This paper consists of three printed pages.**
- **All working including rough work must be clearly shown on the same sheet as the rest of the answers.**

Section A (15 Marks)
[Attempt all questions.]

Question 1 **[5x1=5]**

a) **Discuss the working of a shorthand operator with the help of an example.**
b) **Which data type(s) is an exact representation of fractional values? What is the memory space in bits occupied by the same?**
c) **What is a pure expression? Explain with the help of an example.**
d) **Write a Java statement to display the following sentence**

"Hello" the path of success is drive:\ hard work\success

e) **Rewrite the following program segment using ternary operator:**

```
if (a + b < c || a + c <= b || b + c <= a)
   s = "Triangle is not possible";
else
   s = "Triangle is possible";
```

Question 2 **[5x2=10]**

a) **Predict the output of the following code, where, x= 1.5, y= -3.0;**

i) **System.out.println(Math.floor(Math.round(y))+Math.min(x,y));**

ii) **System.out.println(Math.ceil(Math.rint(x)/Math.max(y,x)));**

b) **Write the equivalent java expression for the following:** $\frac{1}{2x^2i}\left(x - i^2\right) + ky^3$

c) What will be the output of the following code:

```
int k = -10; float j = 1.3f;
k - = ++k * --j + k / j - --k % j++ ;
System.out.println(k);
System.out.println(j);
```

d) State the final value of *p* at the end of the following program segment. How many times the loop will execute?

```
int p = 4;
while (p<=15)
{  p++;
   if(p== 10)
   continue;
   System.out.println(p++); }
```

e) Rewrite the following program using while:

```
class Test
{ public static void main( )
  { int x,c;
  for(x=10,c=20;c>=10;c=c-2)
  {  x++;
    System.out.println(x); }}}
```

Section B (45 Marks)

[Attempt all questions.]

The answers in this Section should consist of the Programs in BlueJ environment . Each program should be written using Variable descriptions/Mnemonic Codes so that the logic of the program is clearly depicted. Flow-Charts and Algorithms are not required.]

Question 3 **[15]**

Write a program to input a set of numbers (including positive and negative).
Perform the following tasks:

(a) Count the positive numbers
(b) Count the negative numbers
(c) Sum of positive numbers
(d) Sum of negative numbers
The program should terminate when the user enters digit 0.

Question 4 **[15]**

Write a menu driven program to calculate and display the sum of the following series :

a) S= 2 - 4 + 6 - 8 + ... - 20

b) S = $(1\sqrt{3}/a^2) + (3\sqrt{5}/a^3) + (5\sqrt{7}/a^4)$ + ... to n

Question 5 **[15]**

An Electricity Board charges for electricity per month from their consumers according to the units consumed. The tariff is given below:

Units Consumed	Charges
Up to 200 units	₹3.80/unit
More than 200 units and up to 300 units	₹4.40/unit
More than 300 units and up to 400 units	₹5.10/unit
More than 400 units	₹5.80/unit

Write a program to calculate the electricity bill by taking consumer's name and units consumed as inputs. Display the output in a tabular format.

Consumer name Units consumed Total bill

_____ _____ _____