DELHI PUBLIC SCHOOL NEWTOWN
SESSION 2023-24
MONDAY TEST

CLASS: IX   **TOTAL MARKS: 40**
SUBJECT: COMPUTER APPLICATIONS   **DATE: 13.10.23**

Instructions:

The Question Paper comprises of Two Parts. Part-I is based on Multiple Choice Questions and Application questions. Part -II is based on Java Programs. The intended marks for questions are given in brackets [ ]. This paper consists of three printed pages.

PART-I (20 marks)
[Attempt all question]

Question 1

Choose the correct answer from the choices given: [6×1=6]

i) Parameter used in method prototype is known as:

  a) Defined parameter   b) Actual parameter   c) Formal parameter   d) Passed parameter

ii) Among the operator groups (++,--) and (+, -, /, *, %) in java, which group has higher priority?

  a) (++,--) group has higher priority than (+, -, /, *, %) group

  b) (++,--) group has lower priority than (+, -, /, *, %) group

  c) (++,--) group and (+, -, /, *, %) group have equal priority

  d) None of the above.

iii) Predict the output of the given method definition if 'm' is passed to c:

  void test(char c)

  { System.out.print((int)c); }

  a) 77   b) 109   c) m   d) error

iv) double a= -8.35; double p=Math.abs(Math.floor(a)); What will be the value of p?

  a) 8.3   b) 8.0   c) 7.0   d) 9.0

v) A non static method is invoked though:

  a) object   b) system   c) parameter   d) arguments

vi) A method indicating the function name along with arguments is known as _____

  a) method prototype   b) method signature   c) method header   d) method definition

Question 2 [7x2=14]

a) If a method contains several return statements, how many of them will be executed? Explain with example.

b) Rewrite the following program segment using if-else statements:

String comm = (sales >=45000) ? "7%" : "5%";

c) Read the following passage to answer the given questions:

A method is a program module that is used simultaneously at different instances in a program. It helps a user to reuse the same module multiple times in the program. Whenever you want to use a method in your program, you need to call it through its name.

Give one word answer for the following:-

(i) It defines the scope of usage of a method in the user's program.

(ii) It is the value passed to the method at the time of its call.

d) Write the main method which calls the following method:

int square(int a)

{   return(a * a);   }

e) Write java expressions of the following mathematical expression:

$$Z = s(\sqrt{a} * x)3^3 - \sqrt[3]{x + y}$$

f) Predict the output of the given snippet:

```
class ab
{   void main()
    {   int b = 3, k=0, r,c;
        float a = 15.15f;
        if(k==1)
        {   r = (int)a/b;
            System.out.println(r); }
        else
        {  c=(int)a/b;
            System.out.println(c); }}}
```

g) Write a function prototype of the following:

A function *summ* which receives a decimal number *x* and an integer *n1* and returns true or false.

[Attempt all questions. Each program should be written using Variable descriptions/Mnemonic Codes so that the logic of the program is clearly depicted]

Question 3 [10]

A class Invoice is created to deal with employee's salary details of a company. The class has the following data members and methods-

Class name : **Invoice**

Data Members

ename   : **employee's name**

yr   : **year of experience**

design   : **designation of an employee**

asal   : **annual salary of the employee**

it   : **income tax payable**

Member Methods:

void input()   : **accept necessary inputs**

void calcTax()   : **income tax will be calculated using the following slab:**

Annual income(Rs)	Tax
Upto 130000	No tax
From 130001 – 200000	15% of the annual income
From 200001 – 250000	Rs. 5000 + 20% of the annual income
Above 250000	30% of the annual income

void display()   : **display the data members along with income tax payable.**

Question 4 [10]

Write a program in java to implement the following methods:

i.   **void printTriangle(int terms): the function takes an integer argument to display the pattern of a triangle in the given form.**
     Sample input: terms 5
     Sample Output: 1
                      2 2
                      3 3 3
                      4 4 4 4
                      5 5 5 5 5

ii. **void invertTriangle(int terms):the function takes an integer argument to display an inverted triangle in the given form.**
     Sample input: terms=6
     Sample output: 6 6 6 6 6 6
                      5 5 5 5 5
                      4 4 4 4
                      3 3 3
                      2 2
                      1