SOUTH CITY INTERNATIONAL SCHOOL

FIRST TERM MODEL PAPER (2023-24)

Class IX

Computer Applications

Full Marks: 100 **Time: 2 Hours**

Answers to this Paper must be written on the paper provided separately.

*You will **not** be allowed to write during the first **15** 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 (40 Marks)
(Attempt all questions from this section)

Question 1 **[20]**

i) Java technology is

a) Object-oriented
b) Platform independent
c) Multithreaded
d) All of the above

ii) The statement to display x is an even number
a) b = x%2==0?x+2 : x; is b even? if yes, assign x+2 , else assign x
b)b = x%2==0?x+1 : x;
c) x%2==0?x++ : 0;
d) none

iii) The statement used to branch from sequential execution is called _____
a) if
b) break
c) continue
d) case

iv) The operator used to get a single Boolean value by combining two relational operators is
a) arithmetic
b) logical
c) relational
d) ternary

v) What is WORA?
a) Write Once Read Anywhere
b) Write Once Run Anywhere Write Once, Run anywhere
c) Write Once Read Always
d) Write Once Run Always

vi) Evaluate the following expression
5+2==7 5 + 2 == 7
a) true
b) false
c) can't decide
d) none

vii) The if..else construct returns _____ value.
a) integer
b) character if the condition is True , Else the condition is False
c) Boolean
d) null

viii) The value placed in c is
int a=10,b=15;
c = a > b ? a : c c = a > b ? If yes assign a to b, else assign c to c
a) 10
b) 15
c) 0
d) none

ix) 3) What will be the output of the following Java program?

```
class dynamic_initialization
  {
    public static void main(String args[])
    {
      double a, b;
      a = 3.0;
      b = 4.0;
        double c = Math.sqrt(a * a + b * b);
        System.out.println(c);
    }
  }
```

a) 5.0
b) 25.0
c)7.0
d) 13.0

x) Which one is a template for creating different objects?
a) An Array
b) A class
c) Interface
d) Method

xi) 4) Evaluate the following Java expression, if x=3, y=5, and z=10:
++z + y - y + z + x++
a) 24
b) 23
c) 20
d) 25

xii) class selection_statements
```
{
   public static void main(String args[])
   {
      int var1 = 5;
      int var2 = 6;
      if ((var2 = 1) == var1)
         System.out.print(var2);
      else
         System.out.print(++var2);
   }
}
```

a) 1
b) 3
c) 2
d) 4

xiii) What is the return type of a method that does not return any value?
a) int
b) float
c) void
d) double

xiv) What is byte code in Java?
a) Code generated by a Java compiler
b) Code generated by a Java Virtual Machine
c) Name of Java source code file
d) Block of code written inside a class

Byte code of any language is the code file generated by that language compiler

xv) What value will Math.sqrt(-16) return?
a) - 4.0
b) 4.0
c) NaN
d) None of these

Square root of any negative number is imaginary

xvi) Assigning value to a variable during declaration is called _____?
a) Declaration
b) Assignment
c) Initialisation
d) None of these

xvii) Which among the following is a logical error?
a) Missing semicolon
b) Mismatched braces in classes and methods.
c) Misspelled keywords and identifiers.
d) Addition is required but subtraction is performed.

Syntax, Runtime, Logical

xviii) State whether the following statements about switch statement are correct.
i. Switch statement often provides a better alternative than a large series of if-else-if statements.
ii. The break statement is used inside the switch to terminate a statement sequence.
a) True, False
b) False, True
c) True, True
d) False, False

xix) Which among the following relational operator is used to check for the equality between two quantities ?
a) =
b) ==
c) equals
d) None of these

xx) What is the term that is used to represent hierarchical relationship of generalization?
a) Polymorphism
b) Encapsulation
c) Abstraction
d) Inheritance

Question 2

i) if m=10,find the value of m [2]

m+ = m-- + m ++ +m

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ii) Give the output of the following code snippet when ch=1 [2]

```
switch (ch)
{
        case 1:
                System.out.println("Abstraction");
        case 2:
                System.out.println("Encapsulation");
        break;
        case 3:
                System.out.println("Polymorphism");
                default :
                System.out.println("Principles of OOPs");
}
```

iii) Write an expression in Java for z= $\frac{5x^3}{x+y} + 2y$ [2]

iv) What are the values stored in variables r1 & r2? [2]
a) double r1 = Math.abs(Math.min(-2.83,-5.83));
b) double r2= Math.sqrt(Math.floor(16.3));

v) Define Java Tokens with example [2]

vi) Write the symbolic name for a computer memory location. [2]

something you use to store values in your code

vii) Rewrite the following using Ternary operator if: [2]

```
if(income<=10000)
  tax=0;
else
  tax=12;
```

viii) Give the rules for naming variables in java. [2]

ix) Differentiate between if and switch statement. [2]

based on possibility of a condition, based on known cases

infinite possibilities, limited defined cases

x) Explain 'Fall through' with reference to a switch case statement. [2]

one condition that is constant is identified and based on that cases are built

123 = 6

SECTION B (60 Marks)

(Answer **any four** questions from this **Section)**

[The answer in this Section should consist of the Program in either in BlueJ environment or any program environment with Java as the base. Each program should be written using Variable descriptions/Mnemonic Codes such that the logic of the program is clearly depicted. Flow-Charts & Algorithms are not required.]

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Question 3 Write a Java program that takes a 3 digit number as input from the user and displays the sum of the digits.

Define a class to accept a number from the user and display the sum of their digits. **[15]**

```
while (number != 0) {
        int digit = number % 10;
        sum += digit;
        number /= 10;
```

Question 4

Write a program to input marked price of a product from the user and calculate and display the discount amount and the amount after discount paid by the user. Discount is calculated based on the given conditions. **[15]**

Price (in rupees)	Discount %
Upto 1000	2%
1001-5000	4%
5001-10000	8%
Above 10000	10%

discounted_price = Price - (x/100.0 *Price)

Question 5

Write a program to input three sides of a triangle and check whether it is an equilateral triangle or isosceles triangle or scalene triangle. **[15]**

equilateral triangle all sides are equal, isosceles triangle any two sides are equal, scalene triangle 3 sides are unequal

Question 6

Using a switch case statement, write a menu driven program taking user choice to calculate the

i) Area of the Rectangle.

ii) Circumference of a circle (Take π =3.14) (if not given, 22.0/7.0) circumference = 2*pi*r

iii) Volume of a cuboid (v=l*b*h) **[15]**

Question 7

Write a program to input three unequal numbers and display the second smallest number. **[15]**

Sample Input: 98 55 10

Sample Output: 55

Question 8

Write a program to check a number input by a user is a one digit number, a two digit number, a three digit number. Now perform the following

a) if it is one digit number then display its square.
b) if it is two digit number then display its square root.
c) if it is three digit number then display its cube root. **[15]**

1 Digit means 0 to 9, 2 Digit means 10 to 99, 3 Digit means 100 to 999.

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