Class - IX

Time : 2 hr. **Subject - Computer Application** **M.M. : 100**

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 to write the answers.
This paper is divided into TWO sections.
Answer ALL the questions in Section A and any FOUR questions from Section B.
The intended marks for questions or parts are given in [ ].

SECTION - A [40 MARKS]

Attempt ALL questions from this section.

Q.1- a. What is a block? [2]
b. What is dynamic initialization? [2]
c. What are operators? [2]
d. What is dangling else? [2]
e. Explain the character set used by Java. [2]

Q.2- a. What is an escape sequence? [2]
b. What are Tokens? [2]
c. Differentiate between Implicit type conversion and Explicit type conversion. [2]
d. What is operator precedence? [2]
e. Why is final keyword used? [2]

Q.3- a. Write the JAVA expression for the following:- [4]

i. $d = \sqrt{\ell^2 + b^2}$

$$z = x^3 + y^3 - \frac{xy}{z}$$

ii. $$y = x^3 + z^3 - \frac{x^2}{a}$$

iii. $ut + \frac{1}{2}at^2$

iv. $$\frac{a^2 + b^2}{ab}$$

b. Perform the following as directed:- [2]
i. Assign 43.5 to a variable with a suitable data type.
ii. Assign a variable and write the syntax to find the square root of 99 with a suitable data type.

c. Write the output of the following:- [4]
i. c = a++ * 7 + ++b + ++a *5 + 10 if a = 4; b = 2
ii. x* = ++x – x++ + ++x – x++ if x = 9
iii. k – = 10+(k++) * (++k) + (k++) + 10 if k = 8
iv. p = (++p % 5) * (p++ + (10 + p++)) + (– –p) if p = 4

Q.4- a. Predict the output of the following:-
i. [2]

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

ii.
```
int a = 1, b = 1, m = 10, n = 5;
if((a == 1) && (b == 1))
{
    System.out.println((m + n));
    System.out.println((m - n));
}
if  ((a == 1) || (b == 0))
{
    System.out.println((m/n));
    System.out.println((m%n));
}
```
[2]

b. If int a = 20, b = 20, c = 25. What will be value of b in the following :-
b = (a > 5 && a <= 20) ? c++ : a + b; [2]

c. Write one difference between System.out.print( ) and System.out.println( ). [2]

d. Differentiate between '=' and '==' operator. [2]

SECTION - B [60 MARKS]

Attempt any FOUR questions from this Section.

Each program should be written using **variable description/mnemonic codes** such that the logic of the program clearly depicted. Flow charts and algorithms **are not required.**

Q.5- a. Differentiate between Hardware and Software. [5]

b. What are the features of Graphic User Interface. [5]

c. What are the functions of an Operating System? Explain. [5]

Q.6- a. i. Write short notes on:- [3]

1. Icons 2. Run

ii. Name two Graphic User Interface based Operating System. [2]

b. Differentiate between Application Software and System Software. [5]

c. What is an Operating System? Give an example. [5]

Q.7- A shopkeeper has announced discount to his customers on the purchase of items, based on the total cost of the items purchased. [15]

Total Cost	Discount
upto ₹ 1000	5 %
> ₹ 1001 to ₹ 2000	10 %
> ₹ 2001 to ₹ 5000	15 %
> ₹ 5001	20 %

Write a program to input the total cost and to compute and display the amount to be paid by the customer after availing the discount.

Q.8- a. Write a program to input a number and check whether it is buzz or not. A number is said to be a buzz if it is divisible by 7 or ends with 7. [8]

b. Write a program to input year and check whether it is a leap year or not. [7]

Q.9- a. Write a program to input a number and check whether it is even or odd. [8]

b. Write a program to input three numbers and find out the smallest number among three numbers. [7]

Q.10- Write a program to calculate the electricity bill according to the given tariff:- [15]

Units Consumed	Charges
upto 100 units	₹ 1 / unit
> 100 units & upto 250 units	₹ 2.50 / unit
> 250 units & upto 400 units	₹ 4.00 / unit
Above 400 units	₹ 5.50 / unit

Every consumer has to pay ₹ 200/- as meter charges.

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