I TERM EXAMINATION : 2013-2014

Class - IX

Time : 2 hrs. **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 JVM? [2]

b. Define new keyword. [2]

c. What is a variable? [2]

d. Define identifiers. [2]

e. What is a block. [2]

Q.2- a. What is fall through? [2]

b. Write two differences between if-else and switch. [2]

c. What is type conversion? What are the different types of type conversions. Explain them. [4]

d. What are operators? [2]

Q.3- a. Give the output of the following:- [4]

i. x% = x++ + ++x – 2; if x = 3

ii. x+ = ++y + x + ++y; if x = 13 , y = 8

iii. a = a++ + – –a + ++a * 2; if a = 5

iv. a = – – b + c++ + b; if a = 30 , c = 40

b. Rewrite the following code using ternary operator:- [2]

```
int age = 20;
boolean res;
if(age>=18)
    res = true;
else
    res = false;
```

c. Write the Java expression for the following:- [2]

i. $\sqrt{a^3 + b^3 + c^3}$

ii. $3 - rs^{2r} + 4s$

d. What is dynamic initialization? [2]

e. What is dangling else? [2]

f. What is an escape sequence? [2]

g. Do as directed:- [3]

i. Assign $\sqrt{2}$ (1.414) to a variable with a suitable datatype.

ii. If x = – 9.29, calculate Math.abs(x);

h. Give the output of the following code:- [3]

```
switch(opn)
    {
        case 'a';
        System.out.println("Platform Independent");
        break;
        case 'b':
        System.out.println("Object Oriented)";
        case 'c':
        System.out.println("Robust and Secure");
        break;
```

```
        System.out.println("Wrong Input");
    }
```

when i. opn = 'b'; ii. opn = 'x' iii. opn = 'a'

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.3- a. What are the functions of an Operating System? Explain. [5]

b. i. Booting of a computer system is essential. Explain. [3]

ii. Name four system icons. [2]

c. What do you understand by Graphic User Interface? [5]

Q.4- a. Distinguish between:-

i. Application Software and System Software [5]

ii. Cold Booting and Warm Booting [5]

b. What are the features of Graphic User Interface? Name two Graphic User Interface based Operating System. [5]

Q.5- a. Write a program to calculate and print roots of a quadratic equation $ax^2 + bx + c = 0$ (a != 0) with appropriate messages the roots are given by :

$$x1 = \frac{-b+\sqrt{b^2-4ac}}{2a} \text{ and } x2 = \frac{-b-\sqrt{b^2-4ac}}{2a}.$$ [8]

if $b^2 - 4ac > 0$ then roots are real and unequal

if $b^2 - 4ac = 0$ then roots are real and equal

if $b^2 - 4ac < 0$ then roots are imaginary

b. Write a program to input 2 numbers and swap their values without using third value. [7]

Q.6- a. Write a program to input a number and check whether it is BUZZ number or not. A BUZZ number is a number which either ends with 7 or is divisible by 7. [5]

b. A library charges a fine for books returned late. Following are the fines : [10]

First five days	:	40 paise per day
Six to ten days	:	65 paise per day
Above ten days	:	80 paise per day

Write a program, which takes as input the number of days late and prints the fine.

Q.7- Monthly electricity bill is calculated as :- [15]

Number of units consumed	Rate per unit
< = 100	only meter rent ₹ 200/-
for next 200 units	₹ 1.00 per unit + meter rent
for next 200 units	₹ 1.55 per unit + meter rent
for more than 500 units	₹ 2.10 per unit + meter rent

Write a program to input consumer number, number of units consumed. Calculate bill amount. Print consumer number and total amount to be paid by the consumer.

Q.8- a. Write a program to input 3 nos and print the greatest number without using if-else. [8]

b. Write a program with option:- [7]

i. Area of circle ($\pi * r^2$)

ii. Area of square (side * side)

iii. Area of rectangle (length * breadth)

Display the menu to output the area as per user's choice.

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