COMPUTER APPLICATONS

(THEORY)

(Two Hours)

This paper is divided into two sections.
*You are to answer **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.*

Question 1

(a) State the difference between **double** and **Double**. **[2]**

(b) What is **continue** in while statement. **[2]**

(c) What do you mean by **keyword**? **[2]**

(d) What is meant by a finite loop? Give an example. **[2]**

(e) State the difference between **equals** & **compareTo**. **[2]**

Question 2

(a) Name the following **[4]**

   i) A package name which have **Math** class in it.

   ii) A function that returns index of first occurrence of a specified character.

   iii) A function to extract a part of string.

   iv) OOPs principal that implement data hiding.

(b) What do you mean by Wrapper class? **[2]**

(c) Which of these are valid integers constant? **[4]**

    -400   3,000 045   2.00   +50   090   X12   0XAB

Question 3

(a) Distinguish between 'char' and 'String'. **[2]**

(b) Which of these are valid real constant. **[4]**

    -2.15   2,200.25   2E2   5.12   2E   3.10F 1.2E2.1 4.1×10^2

(c) What do you mean by **nested if** explain with syntax. **[2]**

(d) Find the value of z in the following program segment. **[2]**

```
int  y = 12, z;
    (i)   z = y<<2        (ii)   z = y>>1
```

(e) if String x = "Computer", y = "Applications"; **[4]**
What do the following functions return for?

   i) x.equalsIgnoreCase(y);

   ii) y.indexOf('T',3);

   iii) x.length( ) + y.length( );

   iv) y.substring(4,9);

(f) Rewrite the following code using switch statement. **[4]**

```
if ( x == 5)
{ y = y – 5;
System.out.println("Value of y = " + y );
}
else if ( x == 10)
{  y = y – 10;
   System.out.println("Value of y = " + y );
}
else
{  y = y – 15;
   System.out.println("Value of y = " + y );
}
```

(g) Difference between entry & exit controlled loop. **[2]**

SECTION-B (60 Marks)

*Attempt any **four** questions from this section.*

Question 4 [15]

The standard form of quadratic equation is given by: ax2 + bx + c = 0, where d = b2 – 4*a*c , is known as discriminate which determines the nature of the roots of the equation accordingly :

If d >= 0   Roots are real

If d < 0   Roots are imaginary

WAP in Java to determine the roots of a quadratic equation (if d > 0) taking a, b, c as input, otherwise roots are Imaginary.

Where roots are given by the formula: $r1 = \dfrac{-b + \sqrt{b^2 - 4ac}}{2a}$, $r2 = \dfrac{-b - \sqrt{b^2 - 4ac}}{2a}$

Question 5 [15]

In an election, out of 1249 voter in a booth, only 861 voters used their franchise correctly. If five candidates are contesting, write a program in Java to find:

(i) The number of invalid and valid votes and

(ii) The percentage of the valid votes received by each candidate.

Question 6 [15]

Write a program to input a number and display sum of first and last digit only.

e.g.   input num = 3459   **output**   sum = 3 + 9 = 12

num = 568   **output**   sum = 5 + 8 = 13

Question 7 [15]

Write a program to display following series

```
1 2 3 4 5 4 3 2 1
1 2 3 4    4 3 2 1
1 2 3        3 2 1
1 2            2 1
1                1
```

Question 8 [15]

Write a program to input a no and check no is PalPrime no or not. (PalPrime is a no which Palindrome as well as Prime)

e.g.   131

----------x---------x----------x---------