Candidates are allowed 15 minutes for only reading the paper, they must NOT start writing during this time.

Answer **all** the questions in **Section A**, and any **four** from **Section B**.

SECTION A
Answer all the questions.

Question 1:
a) What is the difference between formal and actual parameters?   [2]
b) What is the difference between mutator and accessor methods?   [2]
c) What is 'this'?   [2]
d) What are byte codes?   [2]
e) What is Java interpreter known as?   [2]

Question 2:
a) What is inheritance?   [2]
b) What is the difference between a static variable and an instance variable?   [2]
c) Why is a class known as object factory?   [2]
d) What is the size of a character data type in Java?   [2]
e) What is polymorphism?   [2]

Question 3:
a) Name and explain access specifires.   [2]
b) What are wrapper classes?   [2]
c) Explain with example the use of break and continue?   [2]
d) Explain the use of the following functions :
        i. abs( )   ii. ceil ( ) iii. indexOf( )   iv. substring ( )   [4]

Question 4:
What will be the output of the following code segments?   [4+6]
    a) x=0; y=0 ;
            for (i=1, i<=4; i++)
            {
            if (++x <3 && ++ y < 3)
                {
                  ++y;
                }
            System.out.println("x="+x+"y="+y);
            }

    b) What will be the output of the following method for:
                i) f(28, 39)
                ii) f(27, 39)
                iii) What is this method computing ? (Answer should be in one line)
                    Public Boolean f (int a, int b) {
                    // a,b are assumed positive
                    boolean c = false;
                    while (a >1 && b > 1) {
                    if (a > b) a - = b;
                    else b - = a ;
                }
if (a == 1 || b == 1)
c = true ;
return (c) ;
}

SECTION B

[4 x15]

Write programs in Java for any **four** of the following problems along with the variable description.

Question 5:

Declare a single dimension array of size n for integer values. Store the values given by the user in it. Sort the values using selection sort.

Question 6:

Accept a string value from the user and find and print the longest word

Question 7:

Write a menu driven program to find simple interest and compound interest for a given principal, for a given time and at a given rate of interest

Question 8:

Write the overloaded functions to check:
i)   A palindrome number
ii)   A palindrome word

Question 9:

Write a program to find out if a number given by the user is automorphic or not.

Question 10:

```
class                   angle
instance variables : int deg, min
methods             : to accept values for the instance variables
                      to convert angle in min.
                      to convert min(passed as parameter) into deg and min.
```