Preliminary Examination
January, 2015

Computer Applications   M.M.: 100
Class: X   Time: 2Hrs.+ 15Mins.

Candidates are allowed 15 minutes for reading the paper only, they must NOT start writing during this time. Answer **all** the questions in **Section A**, and any **four** from **Section B**.

SECTION A

Question1:

a) What is inheritance? [2]
b) What is Lvalue? [2]
c) What are mixed expressions? [2]
d) Define looping. Write all the looping constructs if JAVA? [2]
e) What are the unary operators? Write all the unary operators used in JAVA? [2]

Question 2:

a) Write the prototype of a function carry that returns a float and takes a float and an integer as parameter. [2]
b) What are wrapper classes? Give an example. [2]
c) What is the use of the keyword 'this'? [2]
d) What is the use of the keyword 'new'? [2]
e) Evaluate the following expressions:

  i. $x = ++y - x$ when x=-2 and y=5. [1]
  ii. $y += x$ with the new values of x and y. [1]

Question 3:

Write the output for the following code segments: [6]

a) String t="kingfisher airlines";
    System.out.println(t.substring(3,7));
    System.out.println(t.lastIndexOf('i'));
    System.out.println(t.toUpper());
b) How is the end of a string determined? [2]
c) Write two rules of naming an identifier in java. [2]

Question 4: [10]

The following function is a part of the class arrange which stores n integer values in an array a[]. The method sort() arranges the values in ascending order. Replace ?1?, ?2?, ?3?, ?4?, and ?5? with appropriate statements.

```
void sort()
    {
        int s, v, u=n-1;
            do
            {
                s=0;
                for(int i=0;i<?1?;i++)
                {
                    if(?2?>a[i+1])
                    {
                        v=a[i];
                        a[i]=?3?;
                        a[i+1]=v;
                        s=1;
                    }
                }
            u=?4?;
            } while(s==?5?);
```

SECTION B

Write programs in java along with the variable description for any **4** of the following questions: [4 x 15 = 60]

Question 5:
To display the sum of all non prime numbers from 11 to 99.

Question 6:
To accept a string from the user and find the longest word.

Question 7:
Declare a class employee as follows:

Data member:
int empcd – employee code
String na – employee name
float bs – basic salary

Methods:
i) a constructor to initialize data members.
ii) to store the values given by the user in the variables.
iii) to calculate net salary as follows:
ns=bs+10% of bs + 72% of bs – 12% os bs
iv) to display details along with net salary.

Question 8:
To search for a value stored in v in an array b[] of size n using binary search technique.

Question 9:
Design overloaded function to print the following patterns:
i) When a string is given as input
FLOWER
FLOWE
FLOW
FLO
FL
F
ii) When an integer value say 4 is given:
****
***
**
*

Question 10:

Calculate the value of $\cos(x)=1-x^2/2!+x^3/3!-x^4/4!+x^5/5!............x^n/n!$
where x and n are given by the user.