Preliminary Examination
January 2018
Class X

COMPUTER APPLICATIONS
(Theory)
(Two Hours)

Answer 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 for writing the answer.

This paper is divided into two Sections.
Attempt **all** questions from **Section A** and any four questions from **Section B**.
The intended marks for questions or part of questions are given in brackets[].

SECTION A(40 Marks)
Attempt **all** questions

Question 1:

a) How is += different from +? [2]
b) Illustrate the ways of assigning values to a variable in java. [2]
c) What do you mean by reference as in parameter passing by reference? [2]
d) Name the logical unary operator. Write an example showing its usage. [2]
e) What is the scope of instance variables? [2]

Question 2:

a) What is the use of wrapper classes? [2]
b) What are class variables? Illustrate their use with the help of an example [2]
c) Write a switch()...case statement to check if a character is a vowel. [2]
d) Explain the working of an exit control loop. [2]
e) State the methods that: [2]
i) check if a letter is an English alphabet or a number
ii) joins two string values

Question 3:

a) What is inheritance? [2]
b) What is a function prototype? Give one example. [2]
c) What is byte code? [2]
d) How can you insert a comment in a java program? [2]
e) How can you determine number of elements in an array? [2]

Question 4:

```
double power(int x, int n)                                    [10]
  {
     int i, inver=0;
     double result=1.0;
     if(n==?1?)          n == 0
          return 1;
     else if(n?2?)       n < 0
          inver=1;
     for(i=1; ?3?;i++)   i <= n
          result?4?x;    result * = n
     if(inver==1)
          result?5?;     result = 1/result;
     return result;
  }
```

Replace statements ?1?, ?2?, ?3?, ?4?, and ?5?such that the function returns the result of x to the power of n.

SECTION B (60 Marks)

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

The answers in this section should consist of **the Programs in either Blue J Environmentor any program environment with Java as the base.**

Each program should be written using **Variable description/Mnemonic Codes** so that the logic of the program is clearly depicted.

Flow-Charts and Algoritlun **are not required.**

Question 5:

Accept two time values in hour, minutes, and seconds and find the difference between them in the same format viz. hours, minutes, and second.

Question 6:

Accept an integer value from the user and determine if it is automorphic.

Question 7:

Write overloaded functions to write a number in words and a number written in words in a numeric value.

For example:

Input - 2463 Output - Two four six three

Input - One nine seven zero four Output - 19704

Question 8:

Declare an array of size n for integer values and store the values given by the user in it. Determine which value occurs maximum number of times.

Question 9:

Accept a string value from the user and count all the words that start and end with the same letter.

Question 10:

Declare the following class:

Class name : ebill

Instance variables : int a – the customer number
String n – the name of the customer
int ren – the meter rent
int pre – the previous reading
int cur – the current reading

Methods :
1) constructor
2) input() – to input values
3) bill() – to calculate the bill which is the sum of the rent and 5 times the unit consumed.
4) disp() – to print all the details along with the bill amount.