Computer Applications:

General Instructions

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

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

Question 1 [10]

(a) Name any two OOP'S principles.

(b) Mention two different styles of expressing a comment in a program.

(c) Which element is num[9] of the array num?

(d) Differentiate between operator and expression.

(e) if m = 5 and n = 2 output the values of m and n after execution in (i) and (ii):-

   i.   m − = n;
  ii.   n = m + m/n;

Question 2 [10]

(a) Explain the term for loop with an example.

(b) What is a compound statement? Give an example.

(c) State the difference between Constructor and Method.

(d) State one similarity and one difference between while and do while loop.

(e) Explain, with the help of an example, the purpose of default in a switch statement.

Question 3

(a) What will be the output of the following, if x = 5 initially? [2]

i.   5 *++x
ii. 5*x++

(b) What is the output of the following? [2]
char = 'A';
short m = 26;
int n = c+m;
System.out.println(n);

(c) Explain the meaning of break and continue statements. [3]

(d) (i) What is call by value?

(ii)How are the following passed?
(1) Primitive types (2) Reference types

(e) Enter any two variables through constructor parameters and write a program to swap and print the values. [4]

(f) What do the following functions return for:- [4]
   String x = "hello";
   String y = "world";

 i.   System.out.prinln(x+y);
 ii. System.out.println(x.length());
 iii. System.out.println(x.charAt(3));
 iv. System.out.println(x.equals(y));

(g) Differentiate between toLowerCase() and toUpperCase() methods. [2]

SECTION - B (60 Marks)
*Attempt **any four** questions from this section.*

Question 4

Write a class with name employee and basic as its data member, to find the gross pay of an employee for the
following allowances and deduction. Use meaningful variables.
Dearness Allowance = 25% of the Basic Pay
House Rent Allowance = 15% of Basic Pay
Provident Fund = 8.33% of Basic Pay
Net Pay = Basic Pay + Dearness Allowance + House Rent Allowance
Gross Pay = Net Pay − Provident Fund [15]

Question 5

Write a program to input any given string to calculate the total number of characters and vowels present in the string and also reverse the string :- [15]

Example : INPUT
              Enter String   : SNOWY
              OUTPUT
              Total number of characters   : 05
              Number of Vowels   : 01
              Reverse string   : YWONS

Question 6

Write a program using a function called area() to compute the area of a :
(i) circle($\pi * r2$) where π = 3.14 (ii) square(side*side) (iii) rectangle (length*breadth)
Display the menu to output the area as per User's choice. [15]

Question 7

Write a program to bubble sort the following set of values in ascending order:
5,3,8,4,9,2,1,l2,98,16 [15]

OUTPUT :   1
                       2
                       3
                       4
                       5
                       8
                       9
                     12
                     16
                     98

Question 8

Write a program to print the sum of negative numbers, sum of positive even numbers and sum of positive odd numbers from a list of numbers(N) entered by the user. The list terminates when the user enters a zero. [15]

Question 9

Write a program to initialize an array of 5 names and initialize another array with their respective telephone numbers. Search for a name input by the User, in the list. If found, display "Search Successful " and print the name along with the telephone number, otherwise display "Search unsuccessful. Name not enlisted". [15]