Std: X (ICSE)

COMPUTER APPLICATIONS

Time : 1hr
Marks: 40

Section – A (20 marks)

Attempt all questions

I   **Multiple Choice Questions**

[5]

1.   Whenever an object is created, which among the following is called first automatically?

    a.   new

    b.   class

    c.   constructor

    d.   trigger

2.   The return type of constructor is ....

    a.   private

    b.   void

    c.   no return type

    d.   Protected

3.   The term overloaded refers to

    a.   An error where more than one method matches a method call

    b.   Two or more methods in the same class that have the same name

    c.   method calls where there are too many actual parameters

    d.   Two or methods in different classes that have the same name.

4.   Argument datatype of startsWith() method is

    a.   boolean

    b.   char

    c.   String

    d.   int

5.   What is the prototype of the default constructor in the declaration:

    public class Test

    {

    }

3

a. public Test void( )

b. public Test( )

c. Test void ( )

d. public void Test ( )

II   Give the output of the following statement   [6]

a.   System.out.println("PRESIDENT".substring(3,7));

b.   String str = "!CSE EXAMINATION";

System.out.println(str.indexOf(str.charAt(11)));

c.   System.out.println("KnOwLEDge".indexOf('e'));

d.   System.out.println(" Macro".compareTo("Micro"));

e.   System.out.println ("BEST". equals ("best"));

f.   System.out.println("Manners".replace('n','t'));

III   Write java statements for the following:-   [2]

1)   To check whether the 10th character of String B is a space

2)   To check whether String K is ending with 'A'

IV   Differentiate the following

a)   Class Variables and Instance Variables.   [2]

b)   equals() and compareTo() (write an example also for each)   [2]

c)   Constructor and Method[only 3 points]   [3]

Section – B (20 marks)

(All programs should be written using comments and variable descriptions)

1)   Design a class telephone with the following description:

Instance variables / Data Members:

int noc [number of calls]

double bill [telephone bill to be paid]

String n [name of the customer]

Member methods :

4

telephone()-default constructor

void input ( ) – to accept the data using the scanner class

void calculate () – to calculate the telephone bill as per the following criteria based on number of calls

Number of calls	Rate per call
First 100 calls	RS 300
For the next 500	Rs.2.50
Above 600	RS. 3

void print() – to print the details

void main( ) – to create an object of the class and invoke the functions of the class

[9]

2) Design a class to overload a function area() as follows:

i) double area(double a, double b, double c) with three double arguments, returns the area of a scalene triangle using the formula:

$$area = \sqrt{s(s-a)(s-b)(s-c)} \text{ where } s = \frac{a+b+c}{2}$$

ii) double area (int a, in b, int height) with three integer arguments, returns the area of a trapezium using the formula:

$$area = \frac{1}{2} height(a+b)$$

iii) double area (double diagonal1, double diagonal2) with two double arguments, return the area of a rhombus using the formula:

$$area = \frac{1}{2} (diagonal1 \times diagonal2)$$

[6]

3) Write a program to accept a word as an argument and check whether the word is Palindrome or not.

Sample Input: madam

Sample output: madam is a palindrome word.

(A word is said to be Palindrome, if it reads same after reversing the characters

[5]