2022

COMPUTER SCIENCE — HONOURS — PRACTICAL

Paper : CC-12P

(OOPs Lab using Java)

Full Marks : 30

Batch - 2

Answer ***any one*** question.

1. Write a program in Java with class Employee and do the following operations on it
   (a) Create two constructor default and with object as parameter to initialize class variable.
   (b) Create a function 'Calculate' which calculates the HRA, DA and gross on the basic pay of employee and return all values as an object.

   HRA = 12% of basic pay, gross = basic pay + HRA + DA

   DA = 3% of basic pay.

   (c) Display the details of the employees whose gross is more than ₹ 50,000.

2. Create a Java program to create and display a singly linked list. Also write a function to reverse the list.

3. Write a program in Java to delete all consonants from an input string and print the resultant string.

4. Create a class 'Box' having parameterized constructor with an object argument to initialize 'length', 'breadth' and 'height' and also create a method 'Volume( )' which returns the volume of the box. Write a Java program to create the class and a test driver main class to test all functions mentioned above.

5. Using methods charAt( ) and lengths( ) of string class, write a Java program to print the frequency of each character in a string.

6. Write a program to create two threads, one prints 'Hello' and other prints 'Hi'.

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Batch - 1

Answer ***any one*** question.

1. Write a Java method to count all words in a string and reverse every word and display them.

2. Write a program in Java to create your own exception as Negative Exception whenever negative values are put in an array.

3. A class called Mypoint, which models a 2D point with x and y co-ordinates. It contains :
   (a) Two instance variables x(int) and y(int).
   (b) A default constructor that construct a point at the default location of (0, 0).
   (c) A overloaded constructor that construct a point with the given x and y co-ordinates.
   (d) A method getData( ) to take values of x and y from user.
   (e) A method called linesegment (MyPoint m, MyPoint n) that find out the gradient of the line segment and returns it from the function.

   Write the MyPoint class in Java and also write a class Gradient-check to test all the public methods defined in the class MyPoint.

4. Write a program in Java to create a base class 'Square' having instance variable 'side : double'. Initiate variable using constructor, a method 'getVolume( ) : double' that calculates volume and print it. Create a derived class 'Cylinder' having instance variable 'height : double'. Initiate variables of both classes through constructor, override method 'getVolume( ) : double' to calculate volume of cylinder taking 'side' variable of base class as 'radius' and print it.

5. Write a Java program to find the longest consecutive elements sequence from a given unsorted array of integers and display it with its length.

Ex : Sample array : [1, 30, 5, 2, 40, 4, 50, 3]. The longest consecutive elements sequence is [1, 2, 3, 4, 5], therefore the program will display [1, 2, 3, 4, 5] and its length 5.

6. Write a Java program to print all permutations of a given string of length 3 (repetition not allowed).

Eg. If the given string is ABC then the permutated strings are ABC, ACB, BAC, CBA, CAB, BCA.
