

**ITE 2005-ADVANCED JAVA PROGRAMMING  
ASSESSMENT NO. 01**

**DEADLINE: 31-01-2022**

01. Develop a Java program to check the reverse of a given number is prime or not
02. Develop a Java program to search for the below listed input format and display the position
  - a. Number in a set of numbers
  - b. Character in a set of characters
  - c. String in a set of Strings
03. Develop a Java program to find the string with maximum length among the set of strings
04. Define a class called as StudentBase containing necessary details about the name, date of birth, blood group and nationality. Define another class called Academics inherited from Student to store the number of courses registered in the particular semester and grade scored in each semester. Define a driver class used to capture the details of atleast 5 students and display the result of those students whose credits are greater than 25.
05. Define a Abstract class called Shape and derive the shapes like Rectangle, Square, Triangle and Circle from it. Provide appropriate definition for computing area of the shapes. Apply runtime polymorphism.
06. Define an interface Sports containing the data member for holding the weightage for the sports activity (say value as 8) and the method named calculateScore(). Define a class called Personal and Academic to store the relevant details about the student. Implementation of the method calculateScore() would add the weightage based on the score obtained the academic courses. For example, in case of 5 subjects if the score is between 450-500 then sports weightage would be the (weightage constant X score/100) and add the new score to the score obtained.
07. Develop a java program to convert the input string into the format given below: "I love Java" as "aIa aevoLa aavaJa"
08. Given the three sides of the triangle a,b and c, calculate the area of the triangle using the formula  $\text{area} = \sqrt{s(s-a)(s-b)(s-c)}$ , where  $s = (a+b+c)/2$ . Throw an user defined exception with appropriate message if sum of two sides is less than the other.