1. Write a Java program that takes two numbers and string as command line arguments and prints the reverse of the sub-string of the string specified by two numbers. The program should handle all possible exceptions that may arise due to bad inputs. For example, in the command line argument, if a user types

Java Substring Cookie 1 4

The output should be 'ikoo'.

2. IT Professors are allowed to enter CAT mark and QUIZ mark for students. Professors can enter only CAT mark is between 0 and 100 and Quiz mark is between 0 and 10. Write a Java program that receives the CAT mark and QUIZ mark from Professor. If the marks fail to satisfy the criteria, then handle the exceptions separately for CAT mark and QUIZ mark.

3. Write a Java program using threads to compute the first 15 natural numbers, and to compute the first 50 Fibonacci numbers. Set the priority of thread that computes Fibonacci number to 9 and the other to 5. After calculating 30 Fibonacci numbers, make that thread to sleep and take up natural number computation. After computing the 15 natural numbers continue the Fibonacci number computing.

4. The southern railway offers concessions for the passengers to travel for a month by giving 25% off on rate for male above 65 years of age and 10% off for female above 60 years of age and 5% off to couples if female is above 18 years and male is above 21years . Create a User defined Exception class so that if the age and gender of the person is not matching with the norms of the concessions, it throws an exception else it offers the concession to the passenger.

5. Mother prepares chapati for her kids. Mother makes chapati and stacks it up in a vessel, and kids eats from it. The max capacity of the vessel is 10. If chapati in the vessel is empty, kids wait for mother to prepare new chapati. Write a Java program to illustrate the given scenario using multithreading.

6. Write a Java program to create a class Student with Registration number, name, CGPA and Proctor Name as its data members. Store the state of objects of this class in a file. Write another class that reads the objects of the Student class from the file. For each object of the class stored in the file, check the CGPA of the student.

- If the CGPA of a student exceeds 90, then categorize the student grade is "A".

- If the CGPA of a student is between 70 and 90, then categorize the student grade is “B”.
- If the CGPA of a student is between 50 and 70, then categorize the student grade is “C”.

7, Write a Java program to define a class ‘CovaxinVaccineCamp to store the below mentioned details for those who were vaccinated at VIT health center.

- Emp-id, Name, age, address, mobile number, blood group, Allergy (yes/no), Date of faculty vaccinated,

Create ‘n’ objects of this class for all the vaccinated. faculty at VIT, Vellore. Write these objects into a file. Read these objects from the file and display the faculty details those who are having allergy.

8. Create a map to store book-Id and cost with five sample values with keys associated with it, like (B1, 100), (B2, 200), (B3, 300), (B4, 400) and (B5, 500). Remove the third Key and Value pair from the Map, also update the cost of B4 value as 800. Traverse through the Map elements using lambda expression.

9. Write a Java program using generic method reverseArray that reverses the order of elements in an array of different types. Print each array before and after calling reverseArray method.(6)

(ii) Write a Java program to read book id, author and publisher details and add books to list and printing all the books using ArrayList and Iterator.

10. Simple calculator using JavaFx
11. Create menu(menubar, menu and menuitems) and event handler using JavaFx.