<table>
<tr><td>1</td><td>a. Write a Java program to read 5 subject marks of a student and calculate the total and grade. The grade system is as follows.
<table>
<tr><th>Letter Grade</th><th>Grade Points</th><th>Marks Range</th></tr>
<tr><td>O (Outstanding)</td><td>10</td><td>91 – 100</td></tr>
<tr><td>A+ (Excellent)</td><td>9</td><td>81 – 90</td></tr>
<tr><td>A (Very Good)</td><td>8</td><td>71 – 80</td></tr>
<tr><td>B+ (Good)</td><td>7</td><td>61 – 70</td></tr>
<tr><td>B (Average)</td><td>6</td><td>50 – 60</td></tr>
<tr><td>RA</td><td>0</td><td>< 50</td></tr>
</table>
b. Write a program that allows a user to enter three words, and display the appropriate three-letter acronym in all uppercase letters. If the user enters more than three words, ignore the extra words.</td></tr>
<tr><td>2</td><td>a. Define a class named COMPLEX for representing complex numbers that contains necessary data members and member functions. A complex number has the general form a + ib, where a is the real part and b is the imaginary part (i stands for imaginary). Include methods for all the four basic arithmetic operators.
b. Write a Java program that determines the number of days in a month.</td></tr>
<tr><td>3</td><td>a. Write a program that inserts parentheses, a space, and a dash into a string of 10 user-entered numbers to format it as a phone number. For example, 5153458912 becomes (515) 345-8912. If the user does not enter exactly 10 digits, display an error message. Continue to accept user input until the user enters 999. Save the file as PhoneNumberFormat.java.
b. Write a Java program to calculate the revenue from a sale based on the unit price and quantity of a product input by the user. The discount rate is 10% for the quantity purchased between 100 and 120 units, and 15% for the quantity purchased greater than 120 units. If the quantity purchased is less than 100 units, the discount rate is 0%.</td></tr>
<tr><td>4</td><td>a.Write an application that prompts a user for a full name and street address and constructs an ID from the user’s initials and numeric part of the address. For example, the user William Henry Harrison who lives at 34 Elm would have an ID of WHH34, whereas user Addison Mitchell who lives at 1778 Monroe would have an ID of AM1778.
b. Count the numbers from 1 to n that have 5 as a digit.</td></tr>
<tr><td>5</td><td>Define an interface “QueueOperations” which declares methods for a static queue. Define a class “MyQueue” which contains an array and front and rear as data members and implements the above interface. Initialize the queue using a constructor. Write the code to perform operations on a queue object.</td></tr>
<tr><td>6</td><td>Write a java class called ‘student’ with name, and rollno. Write a class ‘Result’ to get Marks of 3 subjects and another class “Sports’ to get the points obtained in sports. Calculate the total Marks and displays the result (pass or fail) with points obtained in sports for three students using inheritance and constructor.</td></tr>
<tr><td>7</td><td>Define an abstract class “car” with members reg_no, model, reg_date. Define two subclasses of this class – “transportVehicles ” (validity_no, start_date, period) and “privateVehicle ” (owner_name, owner_address). Define appropriate constructors. Create n objects which could be of either transportVehicles or privateVehicle class by asking the user’s choice. Display details of all “privateVehicle” objects and all “transportVehicles” objects.</td></tr>
<tr><td>8</td><td>Create an interface “CreditCardInterface” with methods to viewCreditAmount, viewPin, changePin and payBalance. Create a class Customer (name, card number, pin, creditAmount –</td></tr>
</table>

	initialized to 0). Implement methods of the interface "CreditCardInterface" in Customer class. Create an array of customer objects and perform the following actions. • Pay Balance • Change Pin
9	Write a Java program to perform the following task. • Take an integer array of size 20, initialize values randomly between 10 and 90, simultaneously sum all values and calculate average. Now separate values below average and above average in ArrayLists. Finally print both lists in 2 separate rows.
10	Write a java program that reads a string from inputs containing first name, last name and computes an e-mail address with first 3 letters of the first name, first 4 letters of last name, '.' separator and domain. Display the outputs by invoking objects. Create a java abstract class to implement stack concept. Check for the overflow and empty conditions.
11	Write a java program for exception handling: a. To create a user defined exception whenever user input the word "hello". b. To add two integers and raise exception when any other character except number (0 – 9) is given as input.
12	Create a class Doctor with attributes id, name, age and department. Initialize values through parameterized constructor. If age of Doctor is not in between 25 and 65 then generate user-defined exception "AgeNotWithinRangeException". If name contains numbers or special symbols raise exception "NameNotValidException". Define the two exception classes.
13	A program accepts two integers as command line arguments. It displays all prime numbers between these two. Validate the input for the following criteria: Both should be positive integers. The second should be larger than the first. Create user defined exceptions for both.
14	Write a Java program 'WordCount' that counts the words in one or more files. Start a new thread for each file. For example, if you call "java WordCount report.txt address.txt Homework.java " then the program might print address.txt: 1052 Homework.java: 445 report.txt: 2099
15	Write a Java program 'LineCounts.java' that will count the number of lines in each files that is specified on the command line. Note that multiple files can be specified, as in **"java LineCounts file1.txt file2.txt file3.txt".**
16	Write a java program to find the minimum, maximum value from the given type of elements using a generic function.
17	a. Write a Java program to demonstrate that as a high-priority thread executes, it will delay the execution of all lower-priority threads.

	b. Write a Java program to read from an input file and convert the words to lower case and write it in another file.
18	Write java programs that include generic method to satisfy the following property. a. To counts the number of odd integers in an integer list b. To exchange the positions of two different elements in an array. c. To find the maximal element in the range [begin, end] of a list.
19	Create a new Java GUI application to convert miles to kilometers when pressing the "Convert!" button. Note that you need to implement the ActionListener interface and override the actionPerformed() method. Note that 1 mile is equal to 1.609 kilometers.
20	Develop a course registration form with Name, Address, phone number,Gender(Male or Female),department(user have to select from CSE, ECE,EEE, Mech, Civil) and course (user have to select from (C,C++,JAVA,PYTHON). When the user submits the form, a dialog box should appear with a message "Username , you have successfully enrolled inCourse Name"