HA #	CO #	Questions
1	1	1. List the keywords in Java 2. List all the datatypes, size and ranges in java 3. Write the syntax of conditional statements and loops in Java with an example for each. 4. Create a class Student with id, marks for 3 subjects, total as static variables, static method to compute the total, main method to print the Student information. Modularize the code to class and package levels. 5. Create a Cuboid class with 3 public instance variables length, breadth and height of type double, and a method volume (). Create 2 objects with different values obtained by command line arguments and print the volume of each. (The program must take 6 values as input) 6. Write a Java Program to create Student class with ID, name, gender and branch. Use getter and setters. The ID must be 9-digit number, name must not have special characters and digits, gender must be either M/F and branch must be either ECE/CSE/ME/ECSE/CE/BT/EEE. Use toString() to format the details of Student. 7. Write a Java Program to read details of 10 students from file and copy them to the other.
2	2	1. Write Java programs to illustrate the usage of the following String Class methods -Searching Strings – indexOf(), lastIndexOf(), isEmpty() Modifying Strings – substring(), concat(), replace(), trim(), toUpperCase(), toLowerCase() 2. Enhance the design Student class by taking input from file "Student.txt". The main () method reads the data from file and displays the menu with the following options: a) Print details of all students b) Search a student based on ID c) Search based on name d) Modify name based on ID e) Exit 2. Write java programs for Cuboid class with all types of constructors.
3	3	1. Write a Java Program that has a class "Room" which is inherited by classes" ClassRoom", "Lab" and "StaffRoom". Identify the properties and methods required to be maintained in each of the classes based on their unique and similar features. ClassRoom has some methods in it which need to be overridden by some of its subclasses based on their unique functionality. Use 'super' keyword to access variables, methods and constructors from subclasses and give the output accordingly. 2. Declare an abstract class, called Instrument, containing a field name and a method called play, that must be implemented by a sub-class. Define a sub-class called StringedInstrument that extends the Instrument class and adds an extra field called numberofStrings. Add two more classes that implement the functionality of a StringedInstrument, called ElectricGuitar and ElectricBassGuitar accordingly. The definition of these newly added classes. Create two different instances of an ElectricGuitar and an ElectricBassGuitar classes and we call their play methods as below. Finally, we create a new class called Execution that contains a single main method.

		3. Create a class named Employee in payroll package. Employee class must contain a showSalary() method. Add another class Boss to the payroll package. Write a java function payEmployee() in Boss class that can call showSalary() method.
		4. Create a package/directory called apple and create a sub directory in apple called computers. Add a public class called Dell and default class called Ups and compile .
		5.Predict the output of the following code:
		Creating first package:
		File name – ClassOne.java
		package package_name;
		public class ClassOne
		{
		public void methodClassOne()
		{
		System.out.println("Hello there its ClassOne");
		}
		}
		Creating second package:
		File name – ClassTwo.java
		package package_one;
		public class ClassTwo {
		public void methodClassTwo(){
		System.out.println("Hello there i am ClassTwo");
		}
		}
		Making use of both the created packages:
		File name – Testing.java
		import package_one.ClassTwo;
		import package_name.ClassOne;
		public class Testing {
		public static void main(String[] args){
		ClassTwo a = new ClassTwo();
		ClassOne b = new ClassOne();
		a.methodClassTwo();
		b.methodClassOne();
		}
		}

	4	1. Write a program that prompts the user to read two integers and displays their sum. Your program should prompt the user to read the number again if the input is incorrect. 2. Write a program that meets the following requirements: Creates an array with **100** randomly chosen integers. Prompts the user to enter the index of the array, then displays the corresponding element value. If the specified index is out of bounds, display the message **Out of Bounds**. 3. Modify the **Loan** class in Listing 10.2 to throw **IllegalArgumentException** if the loan amount, interest rate, or number of years is less than or equal to zero. 4. Write a multi threaded program such that one thread displays even numbers and the other one displays odd numbers 5. Write a multi threaded program such that one thread displays prime numbers and the other one displays composite numbers 6. Enhance the design Student class by taking input from file “Student.txt”. The main () method reads the data from file and stores in an ArrayList and displays the menu with the following options: a) Print details of all students b) Search a student based on ID c) Search based on name d) Modify name based on ID e) Sort based on ID f) Exit