**(Q1) What is Stream?**

It is also a collection(Group of Objects as a single entity) of objects. When we want to process (get object one by one and apply some method on each object) a collection then we use stream. Stream API provides lots of method to process our Collection. Like

map(), flatmap(), filter(), reduce(), forEach(), collect(), count(), distinct() ,min(), max(), sorted(), sorted(Comparator c)

# filter()

**(Q2) Create a List of Integers and filter it’s even items?**

(**Q3) How to filter items based on two conditions. Example there is a list of String names. Find out those names which is less then 8 and greater then 5 characters?**

**(Q4) There is a List<String> which has some null value. Example “Tree”,”Cup”,null, “Forest”,null, “sunny leone”. Create a new collection which will not contain any null?**

**(Q5) Product Object has three properties (id, name, price). There is a list of products which contains many products. Filter those products which has price more than 30K?**

# map()

**(Q6) Convert list of Employee into list of EmployeeDto?**

**(Q7) Convert list of String which contains names in small letter into capital letter?**

**(Q8) There is a list of numbers. Multiply each element of it by 3 and then check even numbers, then multiply the even numbers by 2 and store it into another list?**

**Hint: map().filter().map().collect()**

**(Q9) There is a list of Employee(id, name, salary). You have to find all those employee who has salary more than 50K and convert there name as Mr.Amit ?**

# FlatMap

**(Q10) Employee Object has three fields i.e. int id, String name and List<String> contacts. There is a collection of employees which contains n number of Employee objects. You have to find out all the contact number of all the employees?**

**Hint: collection.stream() 🡪then we get another collection because each contacts is a collection**

**.flatMap(contacts->contacts.stream().map(c->c)).collect()**

**(Q11) there is a three List<Integer> l1={2,4,8}, l2={7,2,5,8}, l3={5,7}**

**There is a another collection which contains List<Integer> collection.**

**List<List<Integer>> universe={l1,l2,l3};**

**You need to find out all the integer value of this universe collection and add 2 in each number?**

**(Q12) List<String> teamIndia=Arrays.asList(“Virat”, ”Dhoni”, “Sachin”, ”Ganguly”)**

**List<String> teamAus=Arrays.asList(“Richy”, ”Mat”, “Glain”, ”warn”);**

**List<List<String>> allTeam=Arrays.asList(teamIndia, teamAus);**

**Find out all the players name and transform there name into capital letter without using java8 Stream and with using java8 Stream?**

**(Q13) distinct()🡪 this method of Stream API is used to remove duplicates. WAP to show it?**

**(Q14) use count() method to show how many unique name is there in a List<String> ?**

**(Q15) inside a Collection there are 10 objects. Get only 5 object from this collection? Hint: use limit()**

**(Q16) use min(), max() and reduce()**

**(Q17) there is a list of integer, sort this list (both ascending and descending order) using Stream API method?**

**(Q18) sort a list of String which contains names?**

**(Q19) There is a list of Employee (id, name, salary) objects. Sort this list based on there salary?**

**(Q20) There is a collection of String which contains some name like Amit, Amanda, Leah, Sumit, Brock, Sunny. Check if any names starts with Am.? Hint: use anyMatch()**

**(Q21) ParallelStream ?**

# Collection vs Collections

Collection is an Interface and Collections is a utility Class which provides lots of utility method like sort, binarySearch, shuffle etc.

How to sort a List using Collections class

Collections.sort()

Collections.sort(new Comparator())

# Array vs Arrays

Arrays is also a utility class which contains lots of utility methods to sort, search etc. for Array object

(Q) How to convert Array into List?

(a) use foreach loop and add each item into list object. (b) Arrays.asList(array)

Integer[] numbers = new Integer[] { 1, 2, 3 };

List<Integer> list = Arrays.asList(numbers);

Note: Arrays.asList() takes Object type of array. If we pass primitive array then we will not get expected result.

Arrays.asList(5,8,2); // it will create immutable/unchangeable list.

(Q) How to create mutable list from immutable list?

List<Integer> list = Arrays.*asList*(numbers);

List<Integer> newList=**new** ArrayList<>(list);

# Comparable and Comparator

(Q22) Create a Employee(id, name, salary, age) Object and add it to list. Then sort it by name, then salary then id then age. Use comparable(I) comparator(I). Collections.sort(), stream().sort() ?