Collection

1.Disadvantages of Arrays.

a.the length of the array is fixed.

b.it is homogenous in nature.(with respective to primitive datatype.but heterogenous with respective to non primitive data)

c.Insertion and deletion is not possible.

d.there are not have inbuilt functions for operations.

2.Advantages of collection

A. The length of collection is dynamic
B. It is heterogeneous in nature.
C. Insertion and deletion is possible .
D. There are in-built functions for operation.

3.Why we go for the Collection?

4.Difference between the Array and Collection.

Array	Collection
1. Arrays are fixed in size i.e once the array with the specific size is declared then we can't alter its size afterward.	1. The collection is dynamic in size i.e based on requirement size could be get altered even after its declaration.
2. Arrays can hold the only the same type of data in its collection i.e only homogeneous data types elements are allowed in case of arrays.	2. Collection, on the other hand, can hold both homogeneous and heterogeneous elements.
3. Arrays can hold both object and primitive type data.	3. collection can hold only object types but not the primitive type of data.
4.insertion and deletion is not possible	4.insertion and deletion is possible
5.here is not having inbuilt functions for operations.	5.here is having inbuilt functions for operations.

5.Difference between Array and ArrayList

Array	ArrayList
1. Arrays are fixed in size i.e once the array with the specific size is declared then we can't alter its size afterward.	1. The collection is dynamic in size i.e based on requirement size could be get altered even after its declaration.
2. Arrays can hold the only the same type of data in its collection i.e only homogeneous data types elements are allowed in case of arrays.	2. Collection can hold both homogeneous and heterogeneous elements.
3. Arrays can hold both object and primitive type data.	3. collection can hold only object types but not the primitive type of data.
4.insertion and deletion is not possible	4.insertion and deletion is possible
5.here is not having inbuilt functions for operations.	5.here is having inbuilt functions for operations.

6.Difference between List and Set

List	Set
1.insertion order is maintained.	1.insertion order is not maintained.
2.here duplicate is allowed.	2.here duplicate is not allowed.
3.null value is allowed.	3.null value is not allowed.
4.it will give unordered elements.	4.it will give ordered collection.

7.Difference between Arraylist and Linkedlist.

Arraylist	Linkedlist
ArrayList internally uses a dynamic array to store the elements.	LinkedList internally uses a doubly linked list to store the elements.
an ArrayList is initialized, a default capacity of 10 is assigned to the ArrayList.	There is no case of default capacity in a LinkedList. In LinkedList, an empty list is created when a LinkedList is initialized.
Data structure is growable.	Data structure is doubly linked list.

8.Difference between Set and Map.

Set	Map
it cannot contain repeated values.	It can have the same value for different keys.
Set doesn't allow us to add the same elements in it. Each class that implements the Set interface contains only the unique value.	Map contains unique key and repeated values. In Map, one or more keys can have the same values, but two keys cannot be the same.
We can easily iterate the Set elements using the keyset() and the entryset() method of it.	Map elements cannot be iterated. We need to convert Map into Set for iterating the elements.

9.Difference between HashSet and TreeSet

HashSet	TreeSet
Data Structure is HashTable.	Data Structure is BalancedTree
Null value is only one	It doesn't allow null value.
It is heterogeneous in nature	It is homogeneous in nature.
Element will displayed in random order	Element displayed in sorted order.

10.Difference between Arraylist and Hashset

Arraylist	HashSet
Insertion order is follow	Insertion order is not follow.
Data structure is growable.	Data Structure is HashTable.
Null value is allowed.	Null value is only one

11. Difference between Hashset and HashMap.

HashSet	HashMap
Data Structure is HashTable.	Data structure is array and linkedlist.
Null value is only one	Only one null key but multiple null value.
Add() is used to add the element.	Put() is used to add the element.
Object and values adding directly.	Key-value pair to add value or element.

12. Difference between HashMap and TreeMap.

HashMap	TreeMap
Data structure is array and linkedlist.	Data structure is redBlackTree
Only one null key but multiple null value.	It allows value as a null but key is not null
HashMap does not maintain order while iterating.	Keys are in ascending order.
HashMap allows heterogeneous elements because it does not perform sorting on keys.	TreeMap allows homogeneous values as a key because of sorting.
It uses **equals()** method of the **Object** class to compare keys.	It uses the **compareTo()** method to compare keys.

13. Difference between HashMap and HashTable

HashMap	HashTable
Data structure is array and linkedlist.	
Only one null key but multiple null value.	Null is not allowed for both key and value.
HashMap inherits **AbstractMap** class.	Hashtable inherits **Dictionary** class.

14. Difference between List and Map

List	Map
here duplicate is allowed.	Map contains unique key and repeated values.
The list maintains insertion order.	The map does not maintains insertion order.
We can add any number of null values.	The map allows a single null key at most and any number of null values.
The list provides get() method to get the element at a specified index.	The map does not provide get method to get the elements at a specified index
To traverse the list elements by using ListIterator.	Through keyset, value, and entry set.

16.when do we go for LinkedHashSet?

Whenever we want to maintain insertion order and not allows duplicate then we go for LinkedHashSet.

17.supermost interface for collection?

Iterable

18.Difference between Comparable and comparator.

Comparable	Comparator
It is present in java.lang package.	It is present in java.util package.
Comparable is having one abstract method called CompareTo()	Comparator is having two method. 1.compare()--- abstract method 2.equals()---concrete method.
Comparable support only one state of the object.(states is the property)	Comparator support multiple states of the object.