1.What is the collection framework in Java?

Ans: The Collection in Java is a framework that provides an architecture to store and manipulate the group of objects. Java Collections can achieve all the operations that you perform on a data such as searching, sorting, insertion, manipulation, and deletion. Java Collection means a single unit of objects.

2. Difference between ArrayList and LinkedList.

Ans:

ArrayList	LinkedList
ArrayList internally uses a dynamic array to store the elements.	LinkedList internally uses a doubly linked list to store the elements.
Manipulation with ArrayList is slow because it internally uses an array. If any element is removed from the array, all the other elements are shifted in memory.	Manipulation with LinkedList is faster than ArrayList because it uses a doubly linked list, so no bit shifting is required in memory.
An ArrayList class can act as a list only because it implements List only.	LinkedList class can act as a list and queue both because it implements List and Deque interfaces.
ArrayList is better for storing and accessing data.	LinkedList is better for manipulating data.
The memory location for the elements of an ArrayList is contiguous.	The location for the elements of a linked list is not contagious.
To be precise, an ArrayList is a resizable array.	LinkedList implements the doubly linked list of the list interface.

3. Difference between Iterator and ListIterator.

Ans:

Iterator	ListIterator
Iterator can traverse the elements in a collection only in forward direction	ListIterator can traverse the elements in a collection in forward as well as the backwards direction.
Helps to traverse Map, List and Set.	Can only traverse List and not the other two.
Indexes cannot be obtained by using Iterator.	It has methods like nextIndex() and previousIndex() to obtain indexes of elements at any time while traversing List.
Cannot modify or replace elements present in Collection.	We can modify or replace elements with the help of set.
Cannot add elements and it throws ConcurrentModificationException.	Certain methods of ListIterator are next(), previous(), hasNext(), hasPrevious(), add

4. Difference between Iterator and Enumeration.

Ans:

Iterator	Enumeration
In Iterator, we can read and remove element while traversing element in the collections.	Using Enumeration, we can only read element during traversing element in the collections.
It can be used with any class of the collection framework.	It can be used only with legacy class of the collection framework such as a Vector and HashTable
Any changes in the collection, such as removing element from the collection during a thread is iterating collection then it throw concurrent modification exception.	Enumeration is thread safe in nature. It doesn't throw concurrent modification exception
Iterator is slower than Enumeration	Enumeration is faster than Iterator
Only forward direction iterating is possible	Remove operations cannot be performed using Enumeration.

5. Difference between List and Set.

Ans: The primary difference between list and set is that a list allows duplicate elements and maintains their order, while a set ensures element uniqueness without any guaranteed order. Since lists are ordered, position indexing is allowed in them. However, in unordered items like sets, positional indexing is not possible.

6. Difference between HashSet and TreeSet.

Ans:

HashSet	TreeSet
It does not provide a guarantee to sort the data.	It provides a guarantee to sort the data. The sorting depends on the supplied Comparator.
It allows null in key and value	It does not allow null
It uses hashCode **()** or equals**()** method for comparison.	It uses compare **()** or compareTo **()** method for comparison.
HashSet is faster than TreeSet	TreeSet is slower than HashSet
It uses HashMap to store its elements.	it uses TreeMap to store its elements.

7. Difference between Array and ArrayList.

Ans:

Array	ArrayList
An array is a dynamically created object. It serves as a container that holds the constant number of values of the same type. It has a contiguous memory location.	The ArrayList is a class of Java Collections framework.
Array is static in size.	ArrayList is dynamic in size.
It performs fast	It performs slowly
se for loop or for each loop to iterate over an array.	use an iterator to iterate over ArrayList.

8. What is Map in Java.

Ans: A map is an interface that represents a collection of key-value pairs, where each key and value pair is known as an Entity. A map contains a unique key.

9. What are the commonly used implementations of Map in Java.

Ans: Commonly used implementations are HashMap, TreeMap, LinkedHashMap.

10. Difference between HashMap and TreeMap.

Ans: HashMap implements Map interface while TreeMap implements SortedMap interface. A Sorted Map interface is a child of Map. HashMap implements Hashing, while TreeMap implements Red-Black Tree(a Self Balancing Binary Search Tree).

11. How do we check if a key exists in a Map in Java.

Ans: util. HashMap. containsKey() method is used to check whether a particular key is being mapped into the HashMap or not. It takes the key element as a parameter and returns True if that element is mapped in the map.