1. What do we mean by an Array?

➢ It refers to index collection of fixed number of homogeneous data elements.
➢ Single variable holding multiple values which improves readability of the program.

2. How to create an Array?

To create an array in Java, follow these steps:

➢ Declare the array variable with the desired data type.
➢ Allocate memory for the array using the `new` keyword and specify the array's size.
➢ Optionally, initialize the array elements.
➢ Access and manipulate the array elements using their indices.

3. Can we change the size of an array at run time?

No, in Java, we cannot change the size of an array at runtime. Once an array is created, its size is fixed and cannot be altered. If we need a data structure that can dynamically resize itself during runtime, we might consider using other classes provided by Java's Collection framework, such as ArrayList, LinkedList, or HashSet, which offer dynamic resizing capabilities.

4. Can we declare an array without assigning the size of an array?

In Java, we can declare an array without assigning its size initially. This is done by omitting the size specification within the square brackets **'[]'** during declaration. Here's how we can declare an array without specifying its size:

```java
// Declare an array variable without specifying size
int[] myArray;


// Later, you can allocate memory and initialize the array
myArray = new int[5]; // Allocates memory for an array with size 5
```

5. What is the default value of Array?
In Java, the default values of array elements depend on their data type:
➢ For numeric types (such as `int`, `double`, `float`, etc.), the default value is 0.
➢ For the `boolean` type, the default value is `false`.
➢ For object references (including arrays of objects), the default value is `null`.
If you create an array but do not explicitly initialize its elements, they will be automatically set to their respective default values.

6. What is a 1D array with an example?

A 1D array in Java is a linear collection of elements of the same data type. It is a single row of elements where each element can be accessed by its index. Here's an example of a 1D array:

```java
public class Array1 {
    public static void main(String[] args) {
        int a[] = new int[4];
        a[0] = 1;
        a[1] = 2;
        a[2] = 3;
        // a[3] = 4;
```

```java
        for(int i = 0; i < 4; i++){
            System.out.println(a[i]);
        }
    }
}
```

7. Write a program on a 2D array?

```java
public class Array3 {
    public static void main(String[] args) {
        int num[][] =
{{1,2,3,4,5},{2,4,5,5,1,3,6},{2,4,5,6,7,8,3,8,8,9},{2,5,6,3,2}};

        for(int n[] : num){
            for(int m : n){
                System.out.print(m+"    ");
            }
            System.out.println();
        }

    }
}
```