**-------------------------------------------PART – A------------------------------------------------**

**Question-1:**

**Code Explanation**:

* The variable total\_comb is calculated by multiplying the number of faces on Die A (6) with the number of faces on Die B (6).
* It represents the total number of combinations possible when rolling both Die A and Die B together.

**Question-2:**

**Code Explanation:**

**Printing All Possible Combinations:**

* The nested for loops iterate through each face of Die A and Die B.
* For each combination of faces (i, j), it prints the combination in the format (i, j).

**Combinations Distribution:**

* Another set of nested for loops is used to print the distribution of all possible combinations.
* Each row represents a different sum, and it prints the values contributing to each sum.

**Question -3:**

**Code Explanation:**

* For each possible sum (ranging from 2 to 12), it calculates the frequency of that sum using the getFreq method.
* The getFreq method returns the frequency of the sum based on its value.
* It then calculates the probability of each sum occurring by dividing its frequency by the total number of combinations.
* Finally, it prints the probability of each sum in the format

"P(Sum=x) = frequency/total\_com".

**getFreq Method**:

* This method takes a sum as input and returns its frequency.
* It handles cases where the sum is less than 2, greater than 12, or falls within the range of 2 to 7 differently, returning appropriate frequencies for each case.

**--------------------------------------------------PART-B------------------------------------------------**

**Code Explanation:**

**undoom\_dice Method:**1**.** This method takes two arrays die\_A and die\_B as input, representing the faces of two dice.2. It creates copies of both arrays using Arrays.copyOf to prevent modification of the original arrays.3. It iterates through each element of New\_Die\_A.4. For each element, if the value is greater than 4, it subtracts 4 from the value and adds this difference to the corresponding element in New\_Die\_B.5. It then sets the value of the element in New\_Die\_A to 4.Finally, it prints the modified arrays New\_Die\_A and New\_Die\_B.

**Main Method:**1. It initializes two arrays die\_A and die\_B representing the faces of Die A and Die B.2. It prints the input arrays die\_A and die\_B.3. It calls the undoom\_dice method with the input arrays.

**Example:**Suppose die\_A = [1, 2, 3, 4, 5, 6] and die\_B = [1, 2, 3, 4, 5, 6] are the input arrays: 1. For each element in die\_A, if the value is greater than 4, it subtracts 4 from the value and adds this difference to the corresponding element in die\_B. 2. After modification, die\_A becomes [1, 2, 3, 4, 4, 4] and die\_B becomes [1, 2, 3, 4, 5, 6].The modified arrays are then printed as output.