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**PRN - B24CE1079**

**Subject - Mathematical Foundation for GenAI**

**ASSIGNMENT 3 - Permutation**

**PROGRAM**

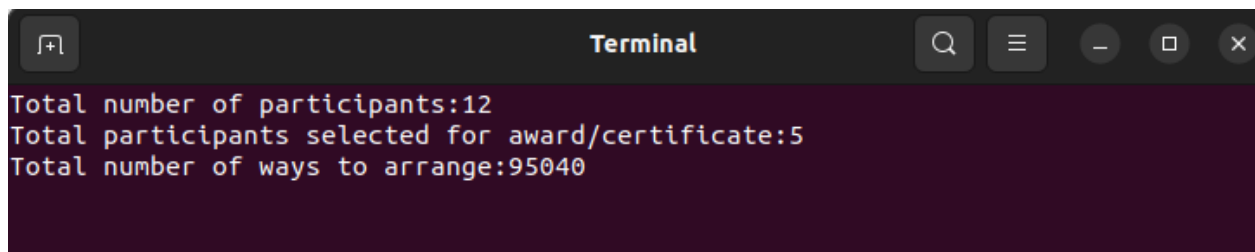
```
#include<iostream>
using namespace std;
int main()
{
    int n = 12; // Total No. of participants
    int r = 5; // no. of participants selected for awards/certificates

    cout<<"Total number of participants:" << n << endl;
    cout<<"Total participants selected for award/certificate:" << r << endl;

    //Calculate nPr for positions
    int arrangements = 1;
    for(int i=0;i<r;i++){
        arrangements *= (n-i); //multiply
    }
    cout<<"Total number of ways to arrange:"<< arrangements << endl;
    return 0;

}
```

**OUTPUT**

A screenshot of a terminal window with a dark background. The title bar at the top says "Terminal" and includes standard window control buttons (minimize, maximize, close) on the right. The terminal displays the output of the C++ program in a light-colored monospace font. The output consists of three lines: "Total number of participants:12", "Total participants selected for award/certificate:5", and "Total number of ways to arrange:95040".

```
Terminal
Total number of participants:12
Total participants selected for award/certificate:5
Total number of ways to arrange:95040
```