

# Assignment 1

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## 1 PROBLEM

(Q 22) Consider the following C fProgram.

```
#include <stdio.h>
int main(){
    int a[4][5] = {{1,2,3,4,5},
                   {6,7,8,9,10},
                   {11,12,13,14,15},
                   {16,17,18,19,20}};
    printf("%d", *((a+**a+2) +3));
    return(0);
}
```

The output of the program is?

## 2 SOLUTION

Answer : The output of the program is 19

### Explanation

Let consider that input **a** is a 2D matrix

$$a = \begin{bmatrix} 1 & 2 & 3 & 4 & 5 \\ 6 & 7 & 8 & 9 & 10 \\ 11 & 12 & 13 & 14 & 15 \\ 16 & 17 & 18 & 19 & 20 \end{bmatrix}$$

From the above matrix **\*\*a** represents the index of the element in 1<sup>st</sup> row 1<sup>st</sup> element i.e 1,

$$* (* (a + 1 + 2) + 3)) \quad (2.0.1)$$

in above equation  $(* (a + 3) + 3)$  this represents the index of 3<sup>rd</sup> column of 3<sup>rd</sup> row in the matrix **a**. Hence the Output the output will 4<sup>th</sup> column of 4<sup>th</sup> row Element of the matrix **a** i.e 19