(1) No. of blue balls = b [→ identical or distinguishable]
No. of green balls = g [→ " or "]
$(b+g)$ no. of balls are to be arranged in a row such that no two ~~balls~~ blue balls are adjacent. $[g \geq b-1]$
Find the total no. of arrangements.

Soln- Let, $I_n = \begin{cases} 1, \text{ if } n \text{ balls are identical} \\ n!, \text{ if } n \text{ " " distinguishable} \end{cases}$
[my symbol]

First, only the green balls are arranged in a row keeping a gap between every pair of adjacent balls (so that, exactly one blue ball fits ~~[illegible]~~ in the gap).
This arrangement of the green balls can be done in I_g ways.

For each of the I_g arrangements of the green balls, there are $(g+1)$ places for the blue balls to put: $(g-1)$ gaps among the green balls and 2 places at the extremeties. b places out of $(g+1)$ can be selected in $\binom{g+1}{b}$ ways.
For each of the $\binom{g+1}{b}$ no. of choices, the blue balls can be arranged in their chosen places in I_b ways.

$\therefore$ Total no. of arrangements $= I_g \binom{g+1}{b} \cdot I_b$.

(Ans)

(2) No. of urns kept in a row $= n$.
No. of blue balls $= b$ [← may be identical or distinguishable]
Every urn can contain at most one blue ball.
The blue balls are to be put in the urns so that no two adjacent urns are occupied. $[n \geqslant 2b-1]$
Find the total no. of arrangements of the blue balls.

Sol:
Let, $g = n-b$.
Let, there be 'g' no. of identical green balls.
Then, the problem is equivalent to: finding the total no. of arrangements of the $n(=b+g)$ balls in a row, such that no two blue balls are adjacent.
By the problem-1, it is

$$I_g \cdot \binom{g+1}{b} \cdot I_b$$

$$= \binom{n-b+1}{b} \cdot I_b \quad \left[\because \text{the green balls are identical, } \therefore I_g = 1\right]$$

(Ans)

[my Symbol: $I_N = \begin{cases} 1, & \text{if the } N \text{ balls are identical} \\ N!, & \text{if the } N \text{ balls are distinguishable} \end{cases}$