PHYSICS
CLASS - XII

Chapter : Capacitor and Capacitance

1. **There are '*n*' identical parallel plates each having an area A. The separation between two successive plates is d. If alternate plates are connected by wires then what will be the capacitance of the combination?**
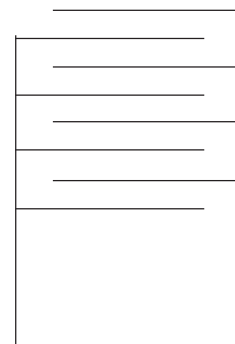
Ans . '*n*' parallel plates constitute $(n-1)$ capacitors.

$\because$ Alternate plates are connected by wires,

$\therefore$ $(n-1)$ capacitors are connected in parallel.

$\because$ The capacitance of each capacitor $= \dfrac{\varepsilon_0 A}{d}$

$\therefore$ The capacitance of the combination will be $(n-1)\dfrac{\varepsilon_0 A}{d}$

2) **If a charged soap bubble expands, what change will be observed in its electric potential?**

Ans : When a soap bubble expands, its capacitance $(C = 4\pi\varepsilon_0 r)$ increases, where *r* is the radius of the bubble. Since the charge (*Q*) on the bubble does not change,

The electric potential $\left(V = \dfrac{Q}{C}\right)$ of the bubble decreases.