



PHYSICS · CHAPTER 2

Electrostatic Potential and Capacitance

A 1-page guide for parents · 90-second read.

EXPECTED MARKS

10 marks

TIME TO MASTER

15-18 hrs

HELPLINE

70330 05444**WHAT THIS CHAPTER IS, IN PLAIN ENGLISH**

Your child is learning the ENERGY side of electrostatics. Where Ch 1 talked about ELECTRIC FIELD (force per unit charge), Ch 2 talks about ELECTRIC POTENTIAL (energy per unit charge) and the device that stores electrical energy — the CAPACITOR. Five core skills: (1) compute potential V due to point or multiple charges, (2) understand equipotential surfaces + their geometric properties, (3) derive capacitance for parallel-plate (with and without dielectric), (4) combine capacitors in series and parallel networks, (5) compute energy stored + understand what happens when charged capacitors are connected (charge conserved, energy NOT conserved).

5 QUESTIONS TO ASK YOUR CHILD

- What is the difference between electric potential V and electric potential energy U ? (Hint: V is per unit charge.)
- In what direction does the electric field point relative to potential — high to low, or low to high?
- If you double the voltage across a capacitor, does its capacitance change?
- Series capacitors: do their capacitances ADD, or do their reciprocals add?
- Two charged capacitors are connected together. Is energy conserved? (Hint: trick question.)

WEAK-SPOT INDICATORS

- Confuses V (volts) with U (joules) — does not realise the per-charge relationship.
- Says E points from low V to high V (reverse of correct direction).
- Reverses series and parallel formulas for capacitors (treats them like resistors).
- Claims energy is conserved when capacitors are connected (only charge is conserved).
- Cannot derive $C = K\epsilon_0 A/d$ for a parallel-plate capacitor with dielectric.

WHEN TO WORRY — AND WHAT TO DO

This is one of the heavier Physics chapters (8-10 marks). If after 2 weeks your child still scores below 60% on the Chapter CBT at [readyforboards.com](https://www.readyforboards.com), book a 30-minute doubt-clearing call: +91 70330 05444.

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