2021 Ph H1 Q21

Section: Electricity

Topic: Current, PD, Power, Resistance

Question Summary
Between X and Y: an 8 Ω resistor in series with a parallel network. Upper branch: 2 Ω + 4 Ω (series = 6 Ω). Lower branch: 6 Ω. Find total resistance.

Worked Solution
Upper branch: 2 + 4 = 6 Ω.
Parallel: 1/Rp = 1/6 + 1/6 = 1/3 ⇒ Rp = 3 Ω.
Add series 8 Ω: Rtotal = 3 + 8 = 11 Ω.

Final Answer: D

Revision Tips

- Series: add resistances.
- Parallel: reciprocals.
- Equal resistors in parallel halve the resistance.