2017 Ph H1 Q17

Section: Electricity

Topic: Capacitors

Question Summary
A capacitor of C = 20 μF is connected to a 12 V d.c. supply. Find the maximum charge stored.

Worked Solution
Use $Q = CV$.

Convert units: $C = 20 \, \mu F = 20 \times 10^{-6} \, F = 2.0 \times 10^{-5} \, F$.
$Q = (2.0 \times 10^{-5}) \times 12 = 2.4 \times 10^{-4} \, C$.

Final Answer: B

Revision Tips

- $Q = CV$ gives the maximum (fully charged) charge on a capacitor on d.c.

- Watch the μ (micro) prefix: $1 \, \mu F = 10^{-6} \, F$.

- Charge is in coulombs (C).