

19 Capacitance — Part 1 — Answers

Answers

Work through these after trying the questions yourself.

19.1 Electric charge.

19.2 $C = Q/V$.

19.3 The farad (F).

19.4 $Q = CV = (100 \times 10^{-6})(12) = 1.2 \times 10^{-3} \text{ C}$.

19.5 $C = Q/V = (6.0 \times 10^{-4})/20 = 3.0 \times 10^{-5} \text{ F} = 30 \mu\text{F}$.

19.6 $Q = CV$, so doubling V doubles the charge Q . The capacitance C stays the same — it is a fixed property of the capacitor.

19.7 One farad would store one coulomb for every volt — an enormous amount of charge. Ordinary capacitors store far less, so their values come out as tiny fractions of a farad, which are easier to write as μF or nF .