

24 Ultrasound – Part 1 —Answers

Answers

Work through these after trying the questions yourself.

24.1 Sound above 20 kHz (too high to hear).

24.2 It changes shape.

24.3 It makes an e.m.f.

24.4 Both makes and detects ultrasound.

24.5 One transducer does both.

24.6 It works in both directions: a p.d. makes the crystal change shape (producing ultrasound), and a returning wave squeezes the crystal to make an e.m.f. (detecting it). So a single crystal can do both jobs.

24.7 A higher frequency has a shorter wavelength, which can resolve smaller structures—so finer detail can be seen.