2018 Ph H1 Q9

Section: Particles and Waves

Topic: The Standard Model

Brief summary of the question

An electron is a…

Worked solution

– In the Standard Model, electrons are leptons, not quarks.

– Leptons are fundamental particles that do not experience the strong nuclear force.

– The six leptons are: electron (e-), muon (mu-), tau (tau-), and their corresponding neutrinos (ve, vmu, vtau).

Final answer

E — lepton.

Revision tips

Leptons: no strong interaction; quarks: experience strong interaction.
Both quarks and leptons are fundamental particles in the Standard Model.
Electron is stable; muon and tau decay into lighter particles.