8 **(a)** State the name of the class (group) of fundamental particles that contains a neutrino.

..... [1]

(b) A hadron P has a charge of +1*e*, where *e* is the elementary charge. The hadron P is composed of a down antiquark and only one other quark.

(i) Identify a possible flavour for this other quark.

..... [1]

(ii) State what type of hadron is P.

..... [1]

(c) Nucleus Q undergoes radioactive decay to form nucleus R, emitting an antineutrino and another particle X, as shown in the decay equation.

$$Q \longrightarrow R + X + \overline{\nu}$$

(i) State what particle is represented by X.

..... [1]

(ii) Compare the nucleon numbers of Q and R.

..... [1]

(iii) Compare the charges of Q and R.

..... [1]

[Total: 6]