

- 7 (a) Table 7.1 shows incomplete data for three flavours (types) of quark. The elementary charge is e .

Table 7.1

flavour	quark		antiquark	
	symbol	charge/ e	symbol	charge/ e
up	u	$+\frac{2}{3}$	\bar{u}	
down	d		\bar{d}	
charm	c		\bar{c}	

Complete Table 7.1 by inserting the missing charges. [2]

- (b) Using the symbols given in Table 7.1, state a possible quark combination for the following hadrons:

(i) a neutral baryon
 [1]

(ii) a meson with a charge of $+e$.
 [1]

- (c) Quarks are fundamental particles.

Electrons are in another group (class) of fundamental particle.

(i) State the name of this group.
 [1]

(ii) State the name of another particle in this group.
 [1]

[Total: 6]