7 (a) the quark model to show that

(i) the charge on a proton is +*e*,

....[1]

(ii) the charge on a neutron is zero.

....[1]

(b) A nucleus of $^{90}_{38}$Sr decays by the emission of a β⁻ particle. A nucleus of $^{64}_{29}$Cu decays by the emission of a β⁺ particle.

(i) In Fig. 7.1, state the nucleon number and proton number for the nucleus produced in each of these decay processes.

	nucleus formed by β⁻ decay	nucleus formed by β⁺ decay
nucleon number		
proton number		

Fig. 7.1 [1]

(ii) State the name of the force responsible for β decay.

....[1]

(iii) State the names of the leptons produced in each of the decay processes.

β⁻ decay: ....

β⁺ decay: ....

[1]

[Total: 5]