11 The photograph shows a power bank used to recharge the battery in an electronic device.

(a) The power bank stores charge.

The charge stored can be measured in amp-hours (Ah). 1 Ah is the amount of charge transferred by a current of 1 A in a time of 1 hour.

Calculate the charge stored in coulombs when the charge stored is 1 Ah.

Use the formula

charge stored = current × time taken

(2)

charge stored = ... C

(b) An electronic device is connected to the power bank.

Whilst recharging, the electronic device receives a constant current of 2.4 A and 3.8×10^3 C of charge is transferred.

(i) Calculate the time taken to recharge the electronic device.

Give your answer in minutes.

(3)

time = ... minutes

(ii) The electronic device is connected to the power bank using a long cable.

Suggest how using a long cable affects the time taken to recharge the electronic device when compared with a short cable.

(2)

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(c) A student owns three electronic devices. Each electronic device stores a different amount of charge.

The table gives some information about the charge stored by the electronic devices and how often they need to be recharged.

Electronic device	Charge stored in Ah	Frequency of recharging
A	2.4	once every day
B	4.2	once during the week
C	6.8	once during the week

The power bank stores a maximum charge of 26.8 Ah.

The student needs to take these three electronic devices on a school trip for one week.

Determine whether the maximum charge of the power bank is enough to recharge the batteries of the three electronic devices during the school trip.

(4)

(Total for Question 11 = 11 marks)