

GCSE Physics B (Twenty First Century Science)
J259/01 Breadth in Physics (Foundation Tier)

Question Set 22

1 Layla charges the battery in her phone every evening.

The energy used to charge the battery is transferred from an energy resource at a power station.

(a) Two examples of energy resources are **fossil fuels** and **wind power**.

(i) Give one **similarity** and one **difference** in the ways these energy resources are used to generate electricity.

[2]

(ii) Another energy resource is the Sun.

Energy is transferred from the energy store in the Sun as radiation.

Explain how the energy is stored in the Sun and how it is converted to radiation.

[2]

(b) Layla notices that her phone charger gets very hot. She thinks this might be dangerous. Her phone also takes a very long time to fully charge.

She decides to buy a new charger.

The table shows information about two phone chargers, **A** and **B**.

Charger	Total energy transferred in 1 second (mJ)	Energy stored usefully in battery in 1 second (mJ)	Efficiency (%)	Cost to buy (£)
A	195	112	57	12.00
B	240	150		12.00

(i) Calculate the efficiency of charger **B**.

Give your answer as a percentage.

Efficiency = %

[3]

(ii) Suggest which charger Layla should buy.

Justify your answer using the data from the table.

[2]

Total Marks for Question Set 22: 9

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