SMART EXAM RESOURCES
SUBJECT: PHYSICS
TOPIC: WORK / ENERGY/ POWER
SET-1O-QP-MS

1 **(a)** Tidal power derives most of its energy from the Moon and part of its energy from the Sun.

(i) State **one** other source of power which derives its energy from the Sun.

..... [1]

(ii) State **one** source of power which does **not** derive its energy from the Sun.

..... [1]

MARK SCHEME:

(a)(i)	*any one from*: • fossil fuel / named fossil fuel • biofuel / wood / crops • hydro • wave • wind • solar cell / panel.	**B1**
(a)(ii)	geothermal **OR** nuclear	**B1**

2 A battery provides energy to an electric car.

Under ideal conditions, the car can travel a maximum distance of 390 km when the battery is fully charged.

Suggest why, in normal use, the car needs to be recharged after travelling less than 390 km.

.....

..... [1]

MARK SCHEME:

	any **one** explicit example of a variation from *ideal conditions* such as: (repeated) acceleration / deceleration / use of brakes / varying speed motion uphill / uneven road surface cold weather / headwind	**B1**

3 Two blocks, A and B, are joined by a thin thread that passes over a frictionless pulley. Block A is at rest on a rough horizontal surface and block B is held at rest, just below the pulley.

Fig. 1.1 shows the thread hanging loose.

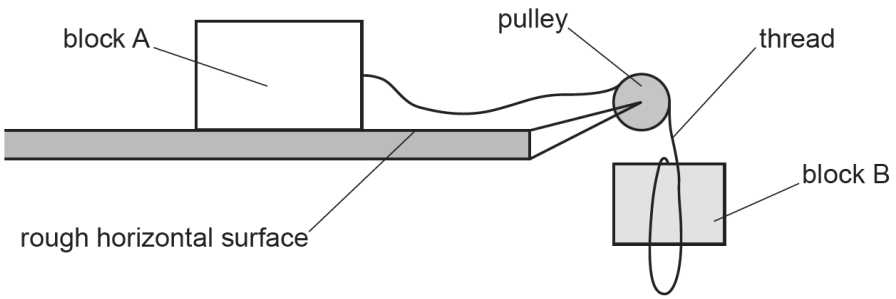

Fig. 1.1 (not to scale)

Both of the blocks now move at a constant speed of 0.60 m/s until block B hits the ground and the thread becomes loose.

Explain the energy change that takes place in block A after block B stops moving.

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..... [3]

MARK SCHEME:

	B3
kinetic energy (of block A) decreases	B1
thermal / internal energy produced / increases (due to friction)	B1
friction mentioned **or** block slows down / decelerates	B1

4 Nuclear fusion in the Sun is the source of most but not all of the resources that are used to generate electrical energy on Earth.

State **two** resources for which nuclear fusion in the Sun is **not** the source.

1. .....

2. .....

[2]

MARK SCHEME:

	any **two** from: • geothermal (energy) • tidal (energy) • nuclear (energy)	**B2**