Practice Question Set For GCSE
Subject : Physics
Paper-1 Topic: Energy (Standard Demand)

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Name of the Student:_____
Max. Marks : 21 Marks **Time : 21 Minutes**

Mark Schemes

Q1.

(a) atoms with the same number of protons
allow atoms of the same element
1

but with a different number of neutrons
1

(b) protons = 11
1

neutrons = 12
1

(c) electrons falling to a lower energy level
1

(d)

Level 2: Scientifically relevant facts, events or processes are identified and given in detail to form an accurate account.	3-4
Level 1: Facts, events or processes are identified and simply stated but their relevance is not clear.	1-2
No relevant content	0
Indicative content **solid** • atoms closely packed • atoms in a regular arrangement • atoms vibrate about a fixed position **liquid** • atoms are close together • atoms are not in regular arrangement • atoms can move past each other **gas** • atoms are well separated • atoms are not in regular arrangement • atoms move randomly at high speeds	

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(e) 60 × 60

1

E = 150 × 3600

1

E = 540 000 (J)

*an answer of 540 000 (J) scores **3** marks*

1

(f) less energy transferred

1

not as bright

1

[14]

Q2.

(a) any **one** from:

- high cost of installing overhead power lines or underground cables or pylons
- high cost as (very) long cables needed
- amount of electricity required is too low

allow not enough (surplus) electricity would be generated

1

(b) Marks awarded for this answer will be determined by the Quality of Written Communication (QWC) as well as the standard of the scientific response. Examiners should apply a 'best-fit' approach to the marking.

Level 3 (5 – 6 marks):
clear comparison of advantages **and** disadvantages of **each** method

Level 2 (3 – 4 marks):
at least **one** advantage **and one** disadvantage is stated for **one** method **and** a different advantage **or** disadvantage is stated for the other method

Level 1 (1 – 2 marks):
at least **one** advantage **or one** disadvantage of either method

Level 0 (0 marks):
No relevant information

examples of physics points made in the response

Advantages of both methods:
- both renewable sources of energy
- both have no fuel (cost)
- both have very small (allow 'no') running costs
- no carbon dioxide produced

accept carbon neutral

accept no greenhouse gases

accept doesn't contribute to global warming

Advantages of wind:
- higher average power output

produces more energy is insufficient

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Advantages of hydroelectric:
- constant / reliable power (output)
- lower (installation) cost

Disadvantages of wind:
- higher (installation) cost
- variable / unreliable power output
- (may) kill birds / bats

Disadvantages of hydroelectric:
- lower power output
- (may) kill fish or (may) damage habitats
- more difficult to set up (within river)

Disadvantages of both methods:
- (may be) noisy
- visual pollution

ignore payback time unless no other relevant points made

ignore time to build for both

6

[7]

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