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

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Name of the Student:_____
Max. Marks : 24 Marks **Time : 24 Minutes**

Mark Schemes

Q1.

(a) (i) much ash produced
acid rain
global warming/greenhouse effect
any 2 for 1 mark each
2

(ii) landscaping/road building*
removal of exhaust gases*
use alternative source not producing CO_2* (*sequential (i))
for 1 mark each
2

(b) (i) $E = 5 \times 10^8 \times 3600 \times 24$ J/day
$\times$ 4 (for 4 generators) (sequential on P $\times$ t) = 1.73×10^{14} (J/day)
for 1 mark each
3

(ii) $2.66 \times 10^{10} \times 18\,829 = 4.86 \times 10^{14}$
for 1 mark each
2

(iii) Eff = output/input
Eff = 1.73/4.86
Eff = 0.36 or worked to a percentage
for 1 mark each
3

(c) (i) boiler – heat to surroundings
turbine – not all steam energy used/heat/sound lost to surroundings
generator – heat in wires/coils/heat to surroundings
transformer – heat in wires/coils/heat to surroundings
any 1 for 1 mark
1

(ii) energy spread out/diluted
as surroundings become warmer/energy lost as heat
difficult to use for further useful energy/transfers
any 2 for 1 mark each
2

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Q2.

(a) m*ust give one advantage and one disadvantage of each to get 4 marks and 2 further scoring points*

Advantages and disadvantages relevant to:
(1) health risk
(5) cost
(6) environmental factors
(7) transport/ storage
e.g. common coal / nuclear – high cost of building both

<u>anti-nuclear</u> examples
nuclear fuel transported on roads/rail in region
possible effects on public health in surrounding area
high cost of de-commissioning
long life very active waste materials produced
how waste materials stored safely for a long time

<u>anti-coal</u> examples
unsightly
pollution
supplies of fuel limited
acid rain
non-renewable

<u>pro-nuclear</u> examples
fuel cheap
no foreseeable fuel shortage

<u>pro-coal</u> examples
safe
reliable
large coal reserves
disposal of solid waste is easier

to max 6

6

(b) choice 0 marks

any three valid reasons each with explanation, which may or may not be comparisons with other fuel

But

at least two of which must be relevant to this site

3

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