

Energy Resources 1 chpt 15 - 18 Revision Answers

- 1) (a) correct order: E B A C D B3
 1 mark for B immediately before A
 1 mark for C immediately before D
 3 marks for all correct i.e. B, A, C then D

- (b) any three from: B3
- conserve non-renewable reserves
 - less atmospheric pollution / acid rain
 - reduces greenhouse gases / global warming
 - (renewable) energy source will not run out
 - reduces dependence on fossil fuels (from other countries)

[Total: 6]

2)

Question	Answer	Marks
3(a)(i)	convection OR radiation	B1
3(a)(ii)	conduction	B1
3(b)	poor emitter OR poor radiator (of thermal energy)	B1
3(c)	(handles) become hot	B1
	use an insulator	B1
Total: 5		

3)

Question	Answer	Marks
4(a)	<u>hot rocks</u>	B1
4(b)	input: thermal	B1
	output: electrical	B1
4(c)	any two from: air pollution OR atmospheric pollution climate change OR global warming OR greenhouse gases use up diminishing resources OR non-renewable	B2
Total: 5		

4)

any **two** advantages from:
 renewable (energy source)
 does not contribute to global warming
 does not contribute to atmospheric pollution
 conserves fossil fuel reserves

any **two** disadvantages from:
 not a reliable supply of electricity
 large area of land needed (for a wind farm)
 unsightly
 threat to birds
 large number needed to replace one power station
 infrastructure more expensive (per MW) than fossil fuel power stations
 needs a suitable (windy) location

B2

B2

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5)

Question	Expected answer	Mark
8(a)	(material Z) melts	B1
8(b)	any five from: (plastic lid) is a good insulator (plastic lid) reduces (heat loss by) convection (plastic lid) reduces (heat loss by) evaporation (vacuum) reduces/prevents (heat loss by) convection (vacuum) reduces/prevents (heat loss by) conduction shiny/silver surface is a poor radiator/bad emitter (of thermal energy) at 60 °C material Z solidifies material Z maintains a constant temperature (60 °C) during solidification/ internal energy is given out	B5
		Total: 6

6)

(a) less pollution / reduced carbon (dioxide) emissions (compared to fossil fuels) OR other environmental reason [1]

(b) any three from:

output expected from wind turbine

energy use by factory

wind is intermittent

whether location has suitable amount of wind

cost / time to recoup cost of turbine

whether location / noise will cause nuisance to neighbours

[max 3]

valid discussion of at least one factor from list above, linking it to the decision

[1]

7)

(a) increase in kinetic energy due to motion

[1]

increase in gravitational potential energy

[1]

due to increase in height

[1]

increase in strain / elastic energy of pole because it is bent

[1]

(b) total energy remains constant (note: can be implied by second mark)

[1]

gravitational potential energy lost = kinetic energy gained (+ thermal energy / heating)

[1]

8)

(a) strain / elastic (potential) (energy)

B1

(b) (i) $(KE =) \frac{1}{2}mv^2$ in any form

C1

1200 J

A1

(ii) (G)PE (gained) = KE (lost) in any form

C1

(G)PE = mgh OR $h = PE \div mg$ in any form

C1

1.8 m e.c.f. from **(b)(i)**

A1

(iii) friction with air OR air resistance OR thermal energy / heat produced/lost

B1