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

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Exam Preparation and Free Resources

Name of the Student:_____
Max. Marks : 19 Marks **Time : 19 Minutes**

Q1.

There are many different energy resources.

(a) Which **two** energy resources are renewable?

Tick **two** boxes.

- Biofuel ☐
- Coal ☐
- Gas ☐
- Geothermal ☐
- Nuclear fuel ☐

(2)

(b) Some non-renewable energy resources are more reliable than others.

Which statement correctly describes a reliable resource?

Tick **one** box.

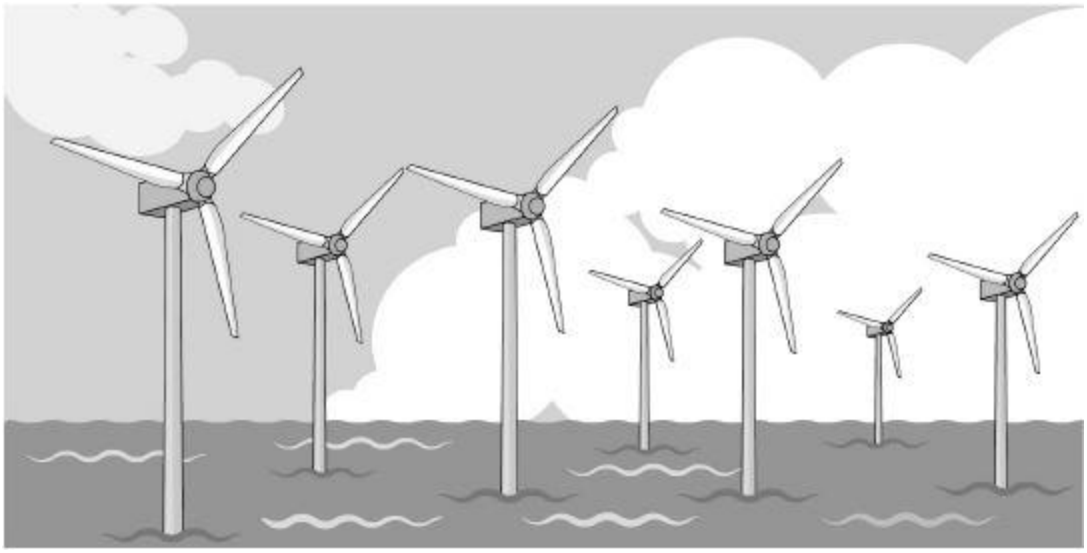
- It does not burn fuel. ☐
- It is predictable. ☐
- It will never run out. ☐
- It is cheap to use. ☐

(1)

(c) **Figure 1** shows a wind farm.

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Figure 1



The total power output of the wind farm is 19.6 MW

All of the wind turbines have the same power output.

What is the power output of **one** wind turbine?

Tick **one** box.

2.7 MW ☐

2.8 MW ☐

2.9 MW ☐

3.2 MW ☐

3.3 MW ☐

(1)

(d) Give **two** reasons why people might **not** like having wind turbines near their homes.

1. _____

2. _____

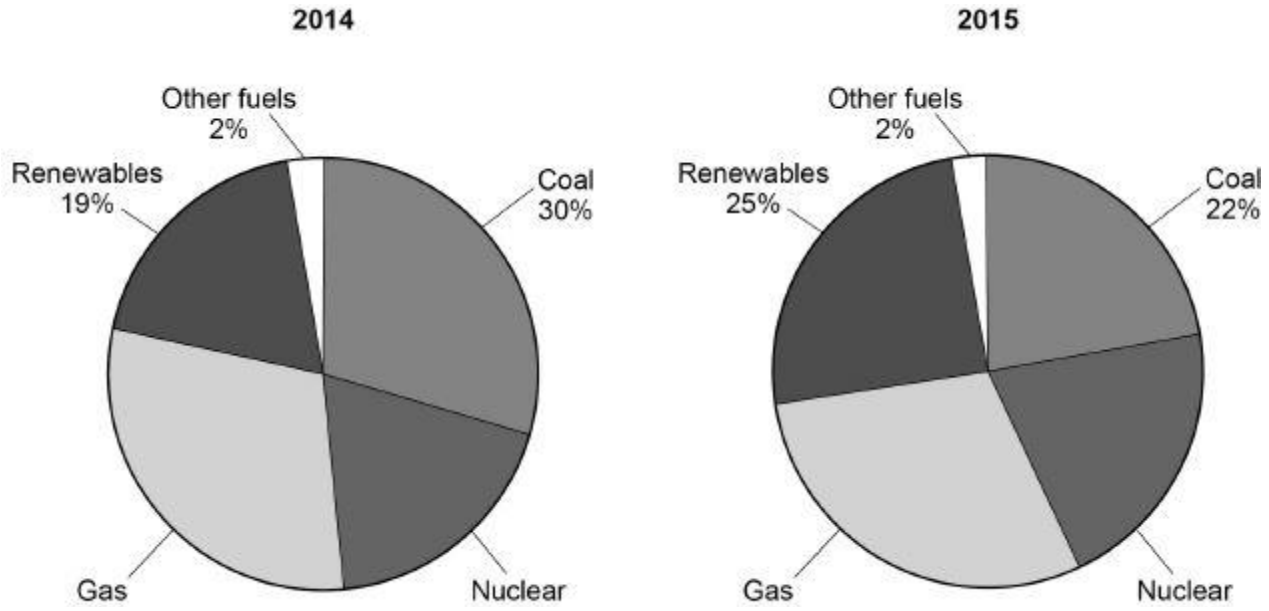
(2)

(e) **Figure 2** shows the electricity generated by different energy resources in the UK.

The total amount of electricity generated was the same in 2014 and in 2015

Figure 2

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There are changes in the amounts of different energy resources used between 2014 and 2015

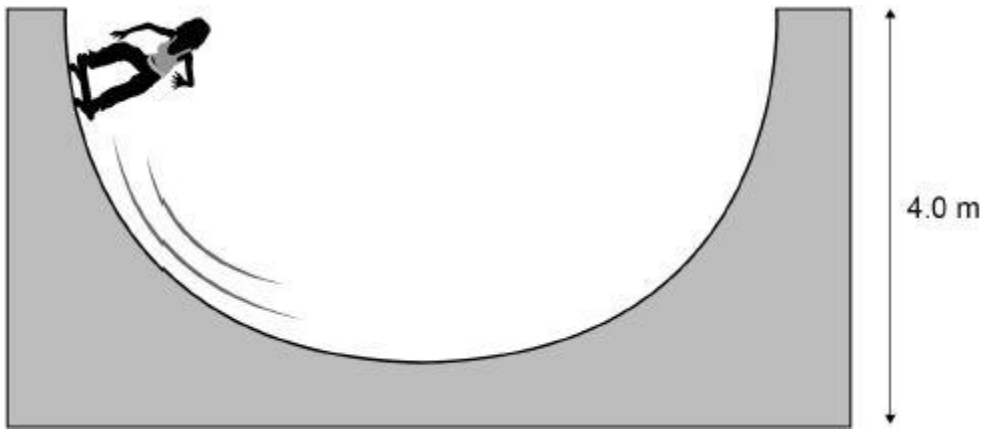
Explain the environmental impacts of the changes.

(4)

(Total 10 marks)

Q2.

The diagram below shows a girl skateboarding on a semi-circular ramp.



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The girl has a mass of 50 kg

(a) Calculate the gravitational potential energy (g.p.e.) of the girl at the top of the ramp.

Use the equation:

g.p.e. = mass × gravitational field strength × height

gravitational field strength = 9.8 N/kg

_____

_____

g.p.e. = _____ J

(2)

(b) The girl has a speed of 7 m/s at the bottom of the ramp.

Calculate the kinetic energy of the girl at the bottom of the ramp.

Use the equation:

kinetic energy = 0.5 × mass × $(\text{speed})^2$

_____

_____

Kinetic energy = _____ J

(2)

(c) Not all of the g.p.e. has been transferred to kinetic energy.

Which **two** statements explain why?

Tick **two** boxes.

Some energy is wasted.	☐
The mass of the girl is too low.	☐
The ramp is not high enough.	☐
The g.p.e. of the girl is not zero.	☐
The speed of the girl is too great.	☐

(2)

(d) Explain how lubricating the wheels of the skateboard can increase the speed of the girl.

Use ideas about energy in your explanation.

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_____

_____

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_____

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_____

(3)

(Total 9 marks)

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