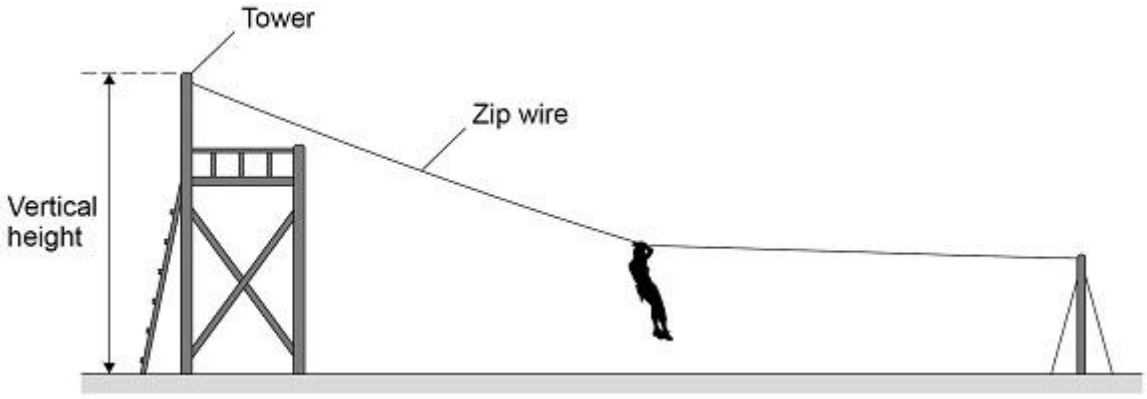
Name of the Student:_____
Max. Marks : 17 Marks **Time : 17 Minutes**

Q1.

The following figure shows a person sliding down a zip wire.



(a) Describe how the vertical height of the tower could be measured accurately.

_____

_____

_____

_____

(2)

(b) When using the zip wire, the person moved through a vertical height of 2.0 m

The person has a mass of 45 kg

gravitational field strength = 9.8 N/kg

Calculate the change in gravitational potential energy of the person.

Use the equation:

gravitational potential energy = mass × gravitational field strength × height

_____

_____

_____

_____

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Change in gravitational potential energy = _____ J

(2)

(c) Give **three** factors that affected the kinetic energy of the person as she reached the bottom of the zip wire.

1 _____

_____

2 _____

_____

3 _____

_____

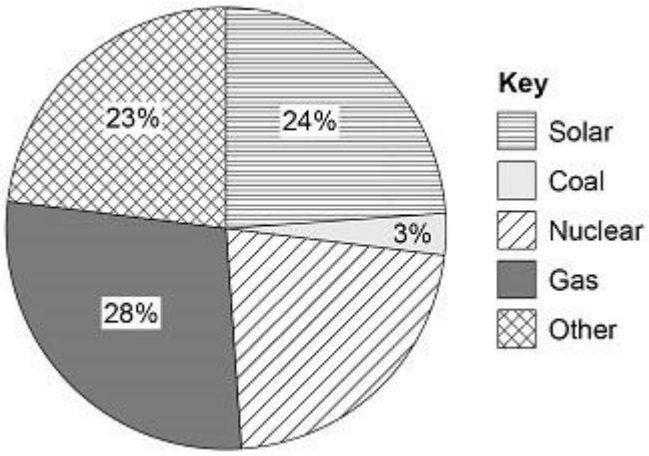
(3)

(Total 7 marks)

Q2.

Figure 1 shows how different energy resources were used in the United Kingdom (UK) to generate electricity on one day in June 2018.

Figure 1



(a) The UK government plans to stop using coal-fired power stations by 2025.

Explain **one** environmental problem caused when electricity is generated by burning coal.

_____

_____

_____

_____

_____

(2)

(b) Give **two** renewable energy resources that could make up the 'Other' energy resources in **Figure 1**.

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1 _____

_____

2 _____

_____

(2)

(c) Determine the percentage of electricity generated in nuclear power stations that day.

Use data from **Figure 1**.

_____

_____

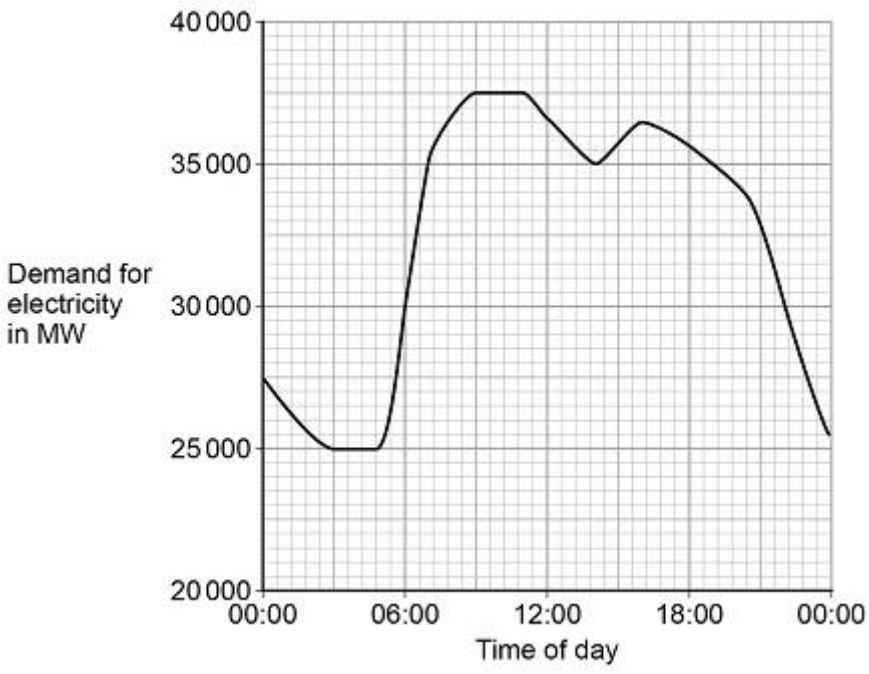
_____

Percentage of electricity generated in nuclear power stations = _____%

(2)

Figure 2 shows how the demand for electricity varied with the time of day.

Figure 2



(d) What was the difference between the maximum demand and minimum demand for electricity during this day?

_____

_____

_____

_____

Difference = _____ MW

(2)

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(e) **Figure 2** shows that the demand for electricity increased between 06:00 and 09:00

Solar power could have met the demand if there were enough solar panels installed in the UK.

Explain why.

_____

_____

_____

_____

(2)

(Total 10 marks)

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