

Name of the Student: _____

Max. Marks : 12 Marks

Time : 12 Minutes

Q1.

Figure 9 shows the renewable energy sources used in the UK in 2015.

Figure 9 is to scale.

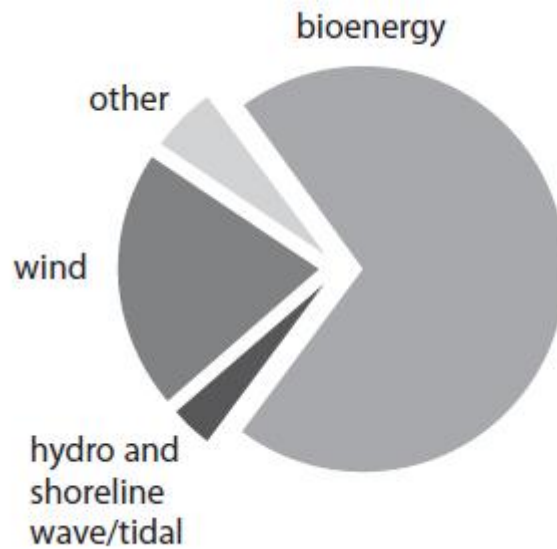


Figure 9

(i) State the energy source that gave the greatest amount of renewable energy for the UK in 2015.

(1)

.....

(ii) Justify your choice of energy source in part (i).

(1)

.....

.....

(iii) State which of these energy sources gave about 20% of the energy from renewable sources for the UK in 2015.

(1)

.....

(Total for question = 3 marks)

Q2.

Figure 18 shows a person on a skateboard at the top of a ramp.

At P, the person is not moving.

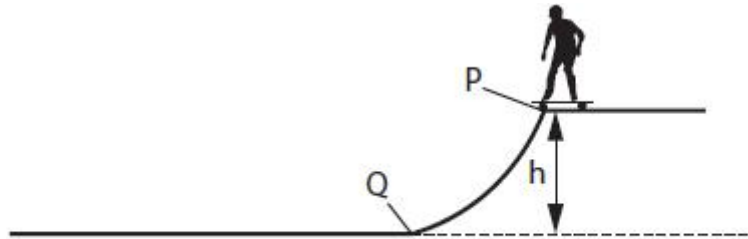


Figure 18

Figure 19 is a diagram that represents energy changes from P to Q.

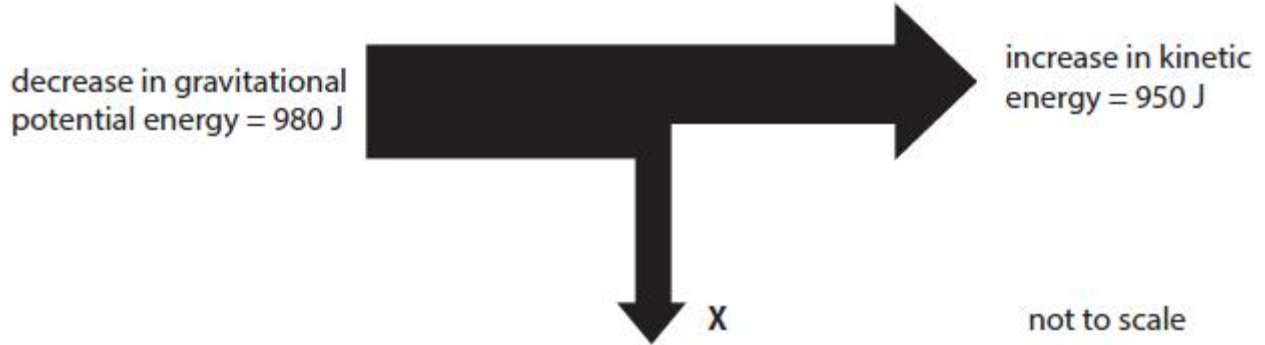


Figure 19

(i) State what is represented by X.

(1)

.....
.....

(ii) Calculate the value of X.

(1)

value of X = J

(iii) Calculate the efficiency of the system represented in Figure 19.

(2)

efficiency =

(Total for question = 4 marks)

Q3.

A student lifts a toy car from a bench and places the toy car at the top of a slope as shown in Figure 16.

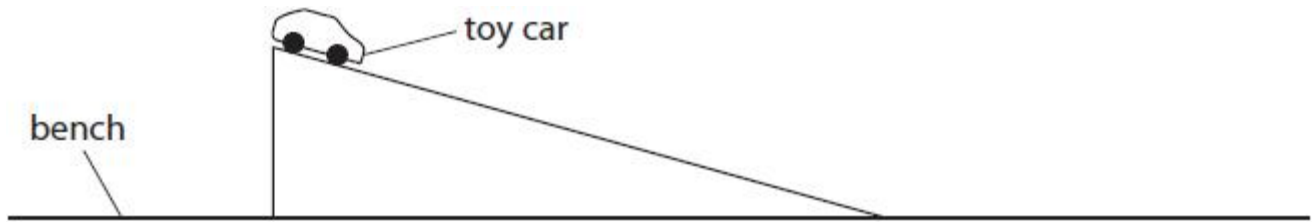


Figure 16

When the toy car rolls down the slope, some energy is transferred to the surroundings as thermal energy. State how the student could calculate the amount of energy transferred to the surroundings.

(1)

.....
.....

(Total for question = 1 mark)

Q4.

A student lifts a toy car from a bench and places the toy car at the top of a slope as shown in Figure 16.

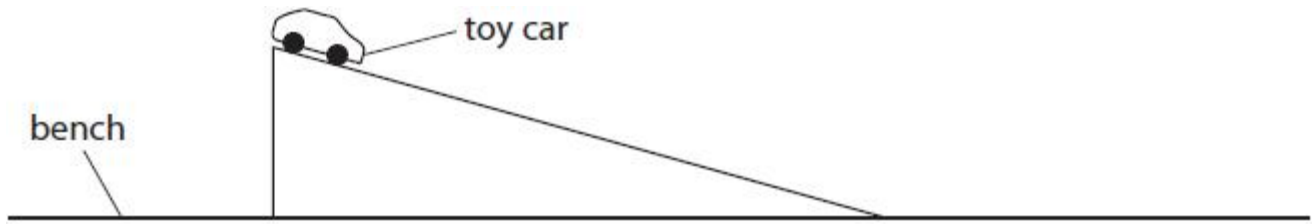


Figure 16

The student needs to develop the experiment to determine the loss in potential energy and the gain in kinetic energy as the toy car is rolling down the slope.

State the other measurements the student must make.

(2)

.....

.....

.....

.....

(Total for question = 2 marks)

Q5.

Figure 18 shows a person on a skateboard at the top of a ramp.

At P, the person is not moving.

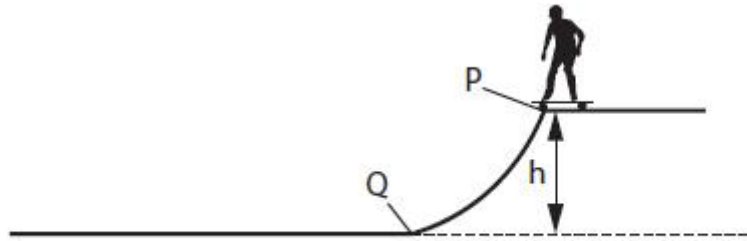


Figure 18

The person would like to start from P again but have a greater velocity at Q.

Suggest **two** ways that this can be achieved.

(2)

1

.....

2

.....

(Total for question = 2 marks)