

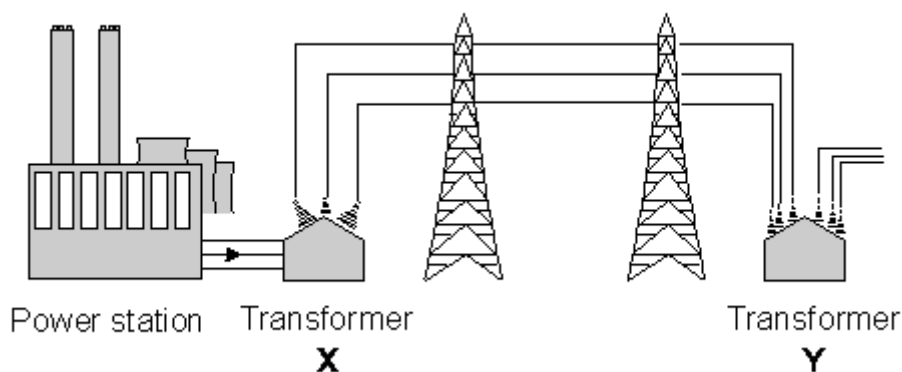
Name of the Student: _____

Max. Marks : 19 Marks

Time : 19 Minutes

Q1.

The outline diagram below shows part of the National Grid. At **X** the transformer increases the voltage to a very high value. At **Y** the voltage is reduced to 240 V for use by consumers.



- (i) At **X** a transformer increases the voltage. What happens to the current as the voltage is increased?

(1)

- (ii) Why is electrical energy transmitted at very high voltages?

(1)

- (iii) The transformer at **Y** reduces the voltage before it is supplied to houses. Why is this done?

(1)

(Total 3 marks)

Q2.

State and explain the advantages and disadvantages of using nuclear power stations to produce electricity.

(Total 4 marks)

Q3.

When you transfer *energy* to a shopping trolley, the amount of *work done* depends on the *force* used and the *distance moved*.



Complete the table by using the correct units from the box.

joule (J)	metre (m)	newton (N)
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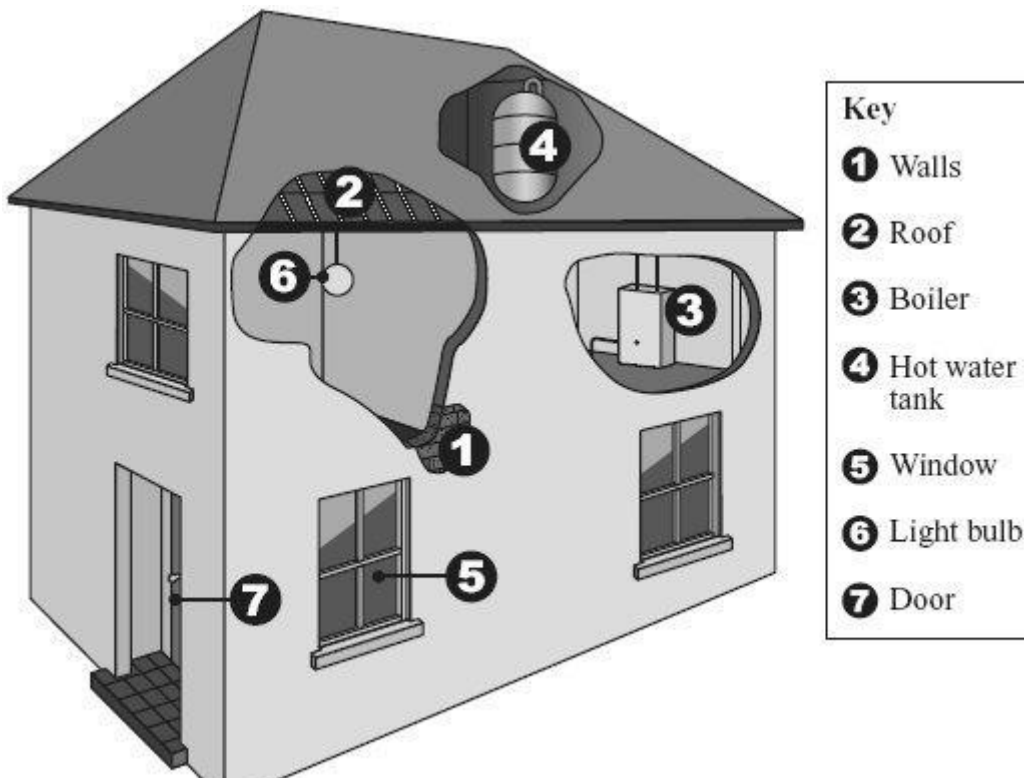
The first one has been done for you.

Quantity	Unit
energy (transferred)	joule
force	
distance (moved)	
work done	

(Total 2 marks)

Q4.

The drawing shows parts of a house where it is possible to reduce the amount of energy lost.



(a) Give **one** way in which the amount of energy lost can be reduced from each of the following parts of the house.

1, 2 and 4 _____

5 _____

7 _____

(3)

(b) Energy consumption can be reduced by using a more efficient boiler or more efficient light bulbs.

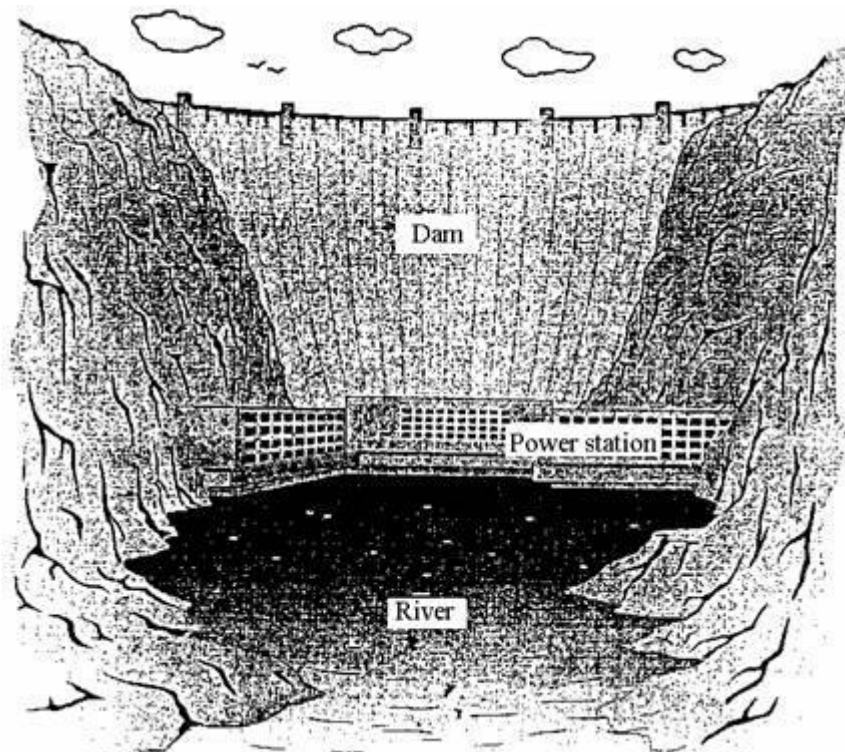
What is meant by a *more efficient* light bulb?

(1)

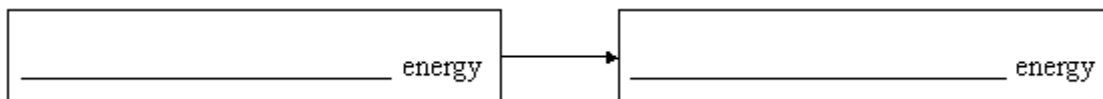
(Total 4 marks)

Q5.

The drawing shows a hydro-electric dam. Water from the top of the dam flows through pipes to the power station at the bottom of the dam.



- (a) Complete the following boxes to show the **useful** energy transfer which occurs as the water flows through the pipes **to** the power station.



(2)

- (b) The electricity generated by the power station is transmitted over long distances. Before this happens its voltage is increased by using a step-up transformer.

State and explain **one** advantage and **one** disadvantage of transmitting electricity at high voltage.

Advantage _____

Disadvantage _____

(4)

(Total 6 marks)