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

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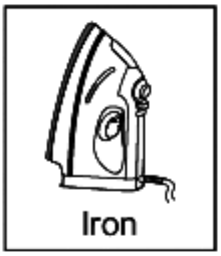
**Name of the Student**:_____
**Max. Marks : 19 Marks** **Time : 19 Minutes**

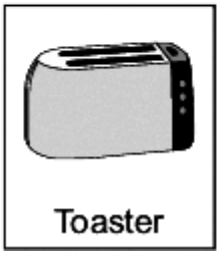
## Q1.

The appliances shown below transfer electrical energy to other types of energy.









(a) The vacuum cleaner is designed to transfer electrical energy to kinetic energy.

Three more of the appliances are also designed to transfer electrical energy to kinetic energy.
Which **three**?

Draw a ring around each correct appliance.

**3**

(b) Which **two** of the following statements are true?

Tick (✓) **two** boxes.

Appliances only transfer part of the energy usefully. ☐

The energy transferred by appliances will be destroyed. ☐

The energy transferred by appliances makes the surroundings warmer. ☐

The energy output from an appliance is bigger than the energy input. ☐

**(2)**

**(Total 5 marks)**

## Q2.

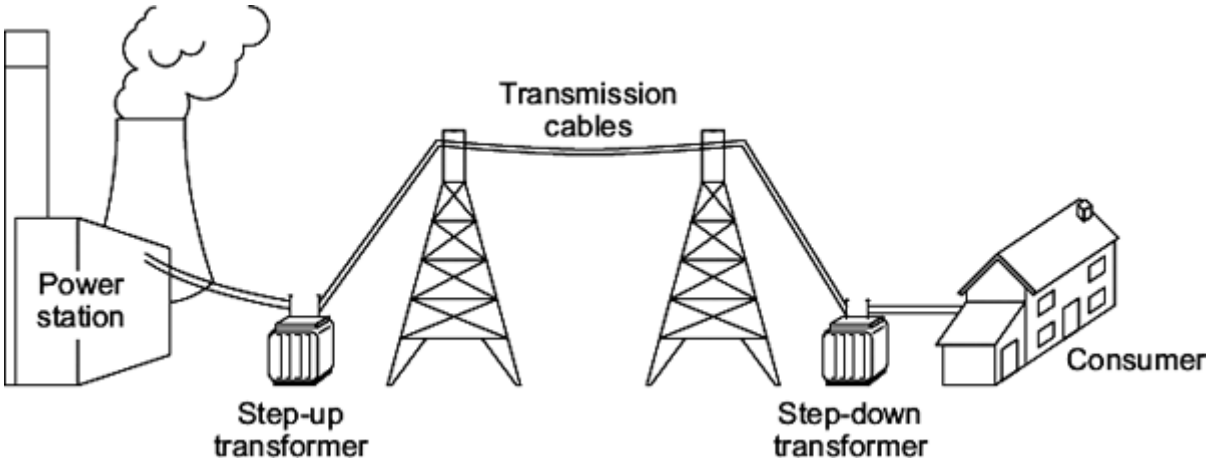
In the UK, most electricity is generated in power stations that burn fossil fuels.

(a) Which type of fossil fuel power station has the shortest start-up time?

_____

**(1)**

(b) The diagram shows how electricity is distributed around the UK.




(i) Which of the parts labelled in the diagram form the National Grid?

_____

**(1)**

(ii) A step-up transformer is used near the power station.

Draw a ring around the correct answer in each box to complete each sentence.

A step-up transformer increases the

| |
|---|
| current. |
| power. |
| voltage. |

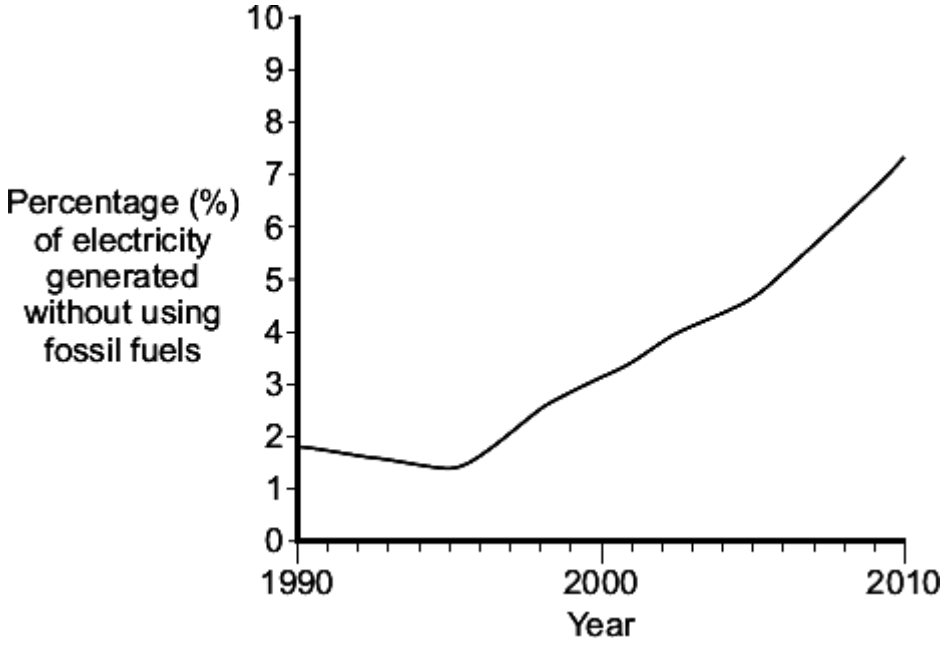
Using a step-up transformer makes the distribution of electricity

| |
|---|
| less dangerous. |
| more efficient. |
| work faster. |

**(2)**

(c) Electricity in the UK is also generated without using fossil fuels.

The graph shows how the percentage of electricity generated in the UK without using fossil fuels changed between 1990 and 2010.




What does the data in the graph suggest will probably happen to the percentage of electricity generated in the UK without using fossil fuels over the next 10 years?

_____

_____

**(1)**

**(Total 5 marks)**

## Q3.

(a) The diagram shows the energy transformations produced by a television.


When the television is working, 1200 joules of energy are supplied to the television every second. The useful energy transferred by the television is 720 joules every second.

(i) Use the equation in the box to calculate the efficiency of the television.

$$\text{efficiency} = \frac{\text{useful energy transferred by the device}}{\text{total energy supplied to the device}}$$

Show clearly how you work out your answer.

_____

_____

Efficiency = _____

**(2)**

(ii) Use **one** word from the diagram to complete the following sentence.

The electrical energy that is **not** usefully transformed by the television is

wasted as _____ .

**(1)**

(b) A homeowner is sent an electricity bill every 3 months. The total amount of electrical energy used during one 3-month period was 800 kilowatt-hours.
Electrical energy costs 15p per kilowatt-hour.

Use the equation in the box to calculate the cost of the energy transferred from the mains electricity supply.

$$\text{total cost} = \text{number of kilowatt-hours} \times \text{cost per kilowatt-hour}$$

Show clearly how you work out your answer and give the unit.

_____

_____

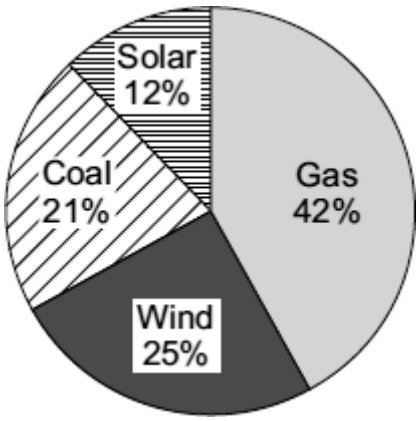
Cost = _____

**(2)**

**(Total 5 marks)**

**Q4.**

(a) The pie chart shows the energy sources used by one company to generate electricity.




(i) Which two energy sources used by the company do **not** produce any polluting gases?

_____ and _____

**(1)**

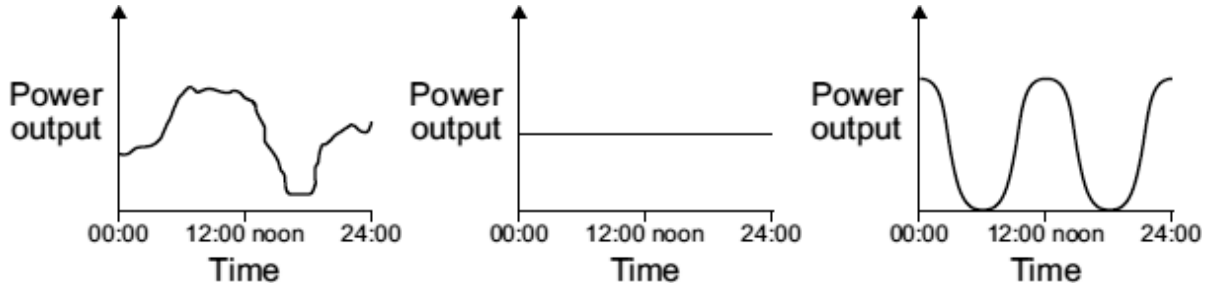
(ii) Calculate the percentage (%) of electricity that is generated using energy sources that do **not** produce any polluting gases.

Percentage = _____

**(1)**

(b) Which graph, **A**, **B** or **C**, is most likely to show the electrical power output from a wind turbine over one day?

Write your answer, **A**, **B** or **C**, in the box.

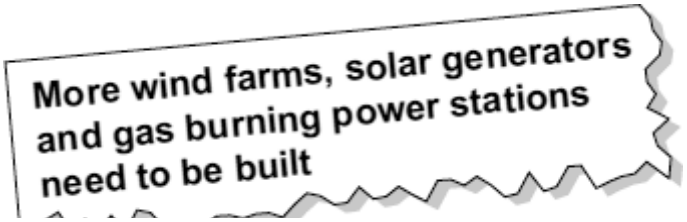



Graph **A** Graph **B** Graph **C**

Graph ☐

**(1)**

(c) The government has said that more electricity must be generated from renewable energy sources. A newspaper reported that:




Why is the statement in the newspaper incorrect?

_____

_____

**(1)**

**(Total 4 marks)**