

Gateway Science Physics A
J249/02 Physics A P5-P8 and P9 (Foundation Tier)

Question Set 19

19

Many power stations burn fuels to generate electricity.

Fuels can be renewable or non-renewable.

(a) Wood is used in some power stations.

Why is wood called a renewable fuel?

[1]

(b) A student has completed her homework on fuels used in power stations.

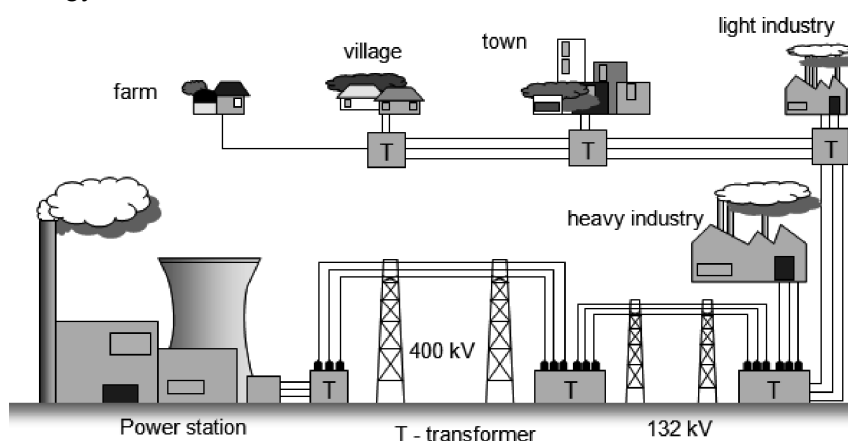
Look at her table below.

Fuel	Type
Wood	renewable
Plant and vegetable oils	renewable
Peat	non-renewable
Coal	renewable
North Sea gas	non-renewable
Uranium	renewable

She has made **two** mistakes, identify these in the table by putting a cross (x) next to them.

[2]

(c) Power stations produce electrical energy and use the National Grid to send the energy to factories and homes in the UK.



A step-up transformer is used in the National Grid.

State what a step-up transformer does.

[1]

(d) Domestic UK electrical wiring uses live, neutral and earth wires.

Complete the two empty boxes.

Draw lines to match up the wires to their **colour** and **function**.

Wire	Colour	Function
Live		Completes the circuit
Earth	Brown	
Neutral	Yellow and green	Has a high potential difference

[4]

(d) The student considers the risks of doing experiments with radioactive sources.

He does experiments with two radioactive sources, **A** and **B**.

He writes down his conclusions about the sources in the table below.

Radioactive material	State	Distance from source	Irradiation risk	Contamination risk
A	solid	1 m	high	none
A	solid	4 m	low	none
B	gas	1 m	very high	high
B	gas	4 m	high	high

Describe the difference in the risks for irradiation and contamination for **A** and **B**.

[4]

Total Marks for Question Set 19: 8

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