Practice Question Set For GCSE
Subject : Physics
Paper-2 Topic : 10_Electricity

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

Q1.

Figure 2 shows the junction of three wires, F, G and H, in a circuit.
The current in wire F is 6.0 A.
The current in wire G is 3.5 A.

Calculate the current in wire H.

(1)

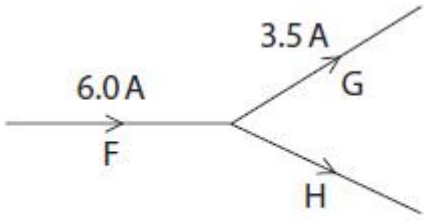


Figure 2

current in wire H = ... A

(Total for question = 1 mark)

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Q2.

The 230 V mains supply transfers 9000 J of energy to the pump motor in 1 minute.

Calculate the current in the pump motor.

Use the equation

$$I = \frac{E}{V \times t}$$

(3)

current = ... A

(Total for question = 3 marks)

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Q3.

(i) Figure 11 shows an electric kettle.

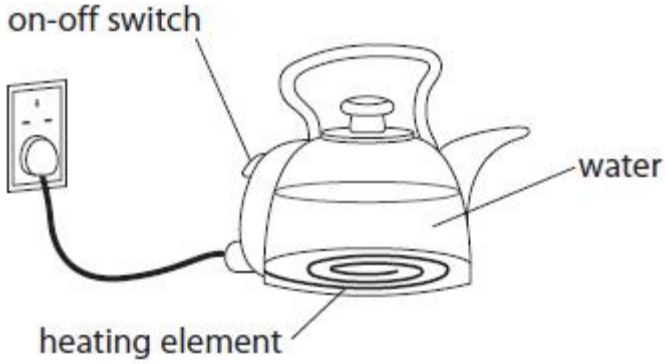


Figure 11

The kettle contains 1.5 kg of water.
The kettle is switched on.
Calculate the energy needed to raise the temperature of the water by 50 °C.
Specific heat capacity of water = 4200 J/kg °C
Use the equation

$$\Delta Q = m \times c \times \Delta\theta$$

(2)

energy needed = ... J

(ii) The amount of energy, *E*, needed to bring the water to boiling point is 670 000 J.

The kettle has a power of 3500 W.
Calculate the time, *t*, it takes to bring the water to boiling point.
Use the equation

$$P = \frac{E}{t}$$

(3)

time to bring the water to boiling point = ... s

(Total for question = 5 marks)

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Q4.

The voltage (potential difference) across a length of wire is 1.5 V.

A charge of 0.042 C flows through the wire.

Calculate the energy transferred.

Use the equation

$$E = Q \times V$$

(2)

E = ... J

(Total for question = 2 marks)

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Q5.

Figure 11 shows part of the UK National Grid system for the supply of electricity to homes.

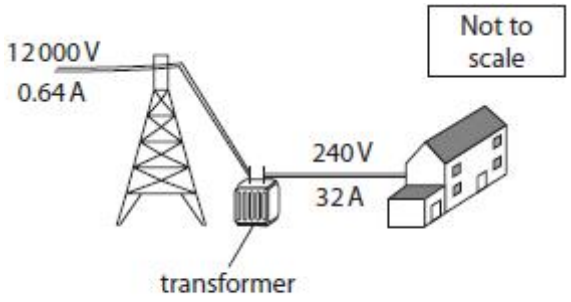


Figure 11

Figure 12 shows details of a transformer.

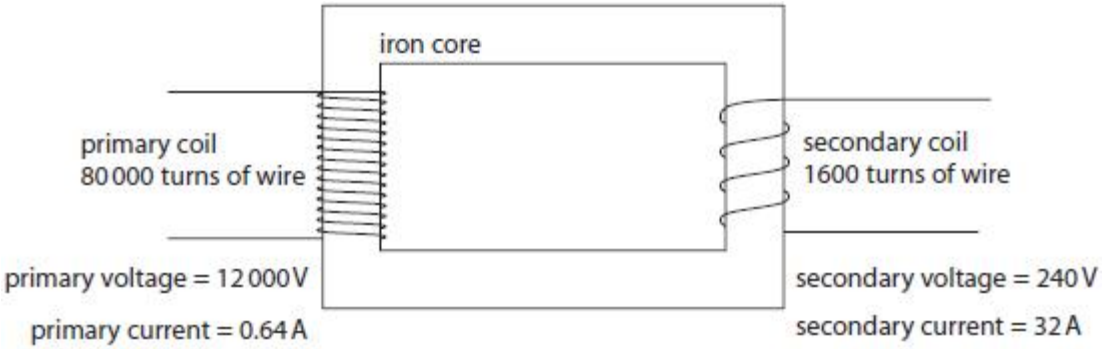


Figure 12

(i) Calculate the power in the primary coil.

Use the equation

$$P = V \times I$$

(2)

power in the primary coil = ... W

(ii) Calculate the following for the transformer in Figure 12.

$$\frac{\text{number of turns in secondary coil}}{\text{number of turns in primary coil}}$$

(2)

.....

(iii) For the transformer in Figure 12, evaluate, in its simplest form, the ratio

secondary voltage : primary voltage

(2)

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..... : .....

(Total for question = 6 marks)

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