Practice Question Set For GCSE
Subject : Physics
Paper-2 Topic : 13_Electromagnetic Induction

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Name of the Student:_____
Max. Marks : 18 Marks **Time : 18 Minutes**

Q1.

A transformer is used to connect a laptop computer to the mains electricity supply.
The input voltage to the transformer is 230 V.
The output current from the transformer is 2.37 A.
The transformer has an output voltage of 19.0 V.
The transformer used is 100% efficient.

Calculate the input current to the transformer.

Use the equation

input current × input voltage = output current × output voltage

(3)

input current = ... A

(Total for question = 3 marks)

Q2.

The transformer in another battery charger has a primary coil and a secondary coil.

The voltage across the primary coil = 230 V.

The voltage across the secondary coil = 15 V.

The current in the secondary coil is 3.1 A.

Calculate the current in the primary coil.

Use the equation

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$$\text{primary current} = \frac{\text{secondary voltage} \times \text{secondary current}}{\text{primary voltage}}$$

(2)

current = ... A

(Total for question = 2 marks)

Q3.

Figure 7 shows details of a transformer.

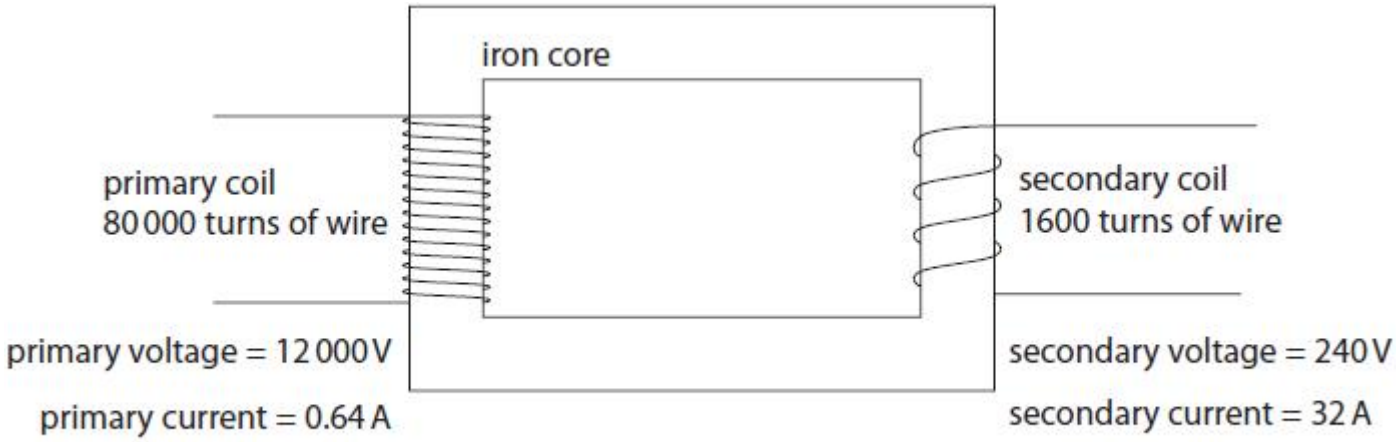

Figure 7

(i) Calculate the power in the primary coil.

Use the equation

$$P = V \times I$$

(2)

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power in the primary coil = ... W

(ii) Calculate the following for the transformer in Figure 7.

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

(2)

.....

(iii) For the transformer in Figure 7, evaluate, in its simplest form, the ratio

secondary voltage : primary voltage

(2)

..... : .....

(Total for question = 6 marks)

Q4.

What is the name of the device used to change the size of an alternating voltage?

(1)

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Q5.

Figure 23 shows an electric car connected to a battery charger.

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Figure 23

* The battery charger shown in Figure 23 is connected to the 230 V a.c. domestic mains supply.

The output voltage of the charger is 335 V and it provides a d.c. charging current. Charging stops if the charging current exceeds 15 A.

Explain how electrical components in the charger can be connected together to give this type of output.

(6)

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(Total for question = 6 marks)

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