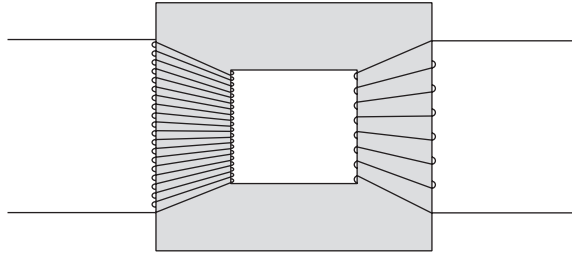


3 (a) The basic structure of a transformer is a primary coil of insulated wire, an iron core and a secondary coil of insulated wire.



3 (a) (i) Why is the core made of iron?

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.....  
*(1 mark)*

3 (a) (ii) Explain how a transformer works.

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*(4 marks)*



- 3 (b) A small step-down transformer is used in the charger for an electric screwdriver.

The input to the transformer is 230 V a.c. mains supply and the output is 5.75 V a.c.  
There are 3200 turns on the primary coil.

Use the equation in the box to calculate the number of turns on the transformer's  
secondary coil.

$$\frac{\text{p.d. across primary}}{\text{p.d. across secondary}} = \frac{\text{number of turns on primary}}{\text{number of turns on secondary}}$$

Show clearly how you work out your answer.

.....  
.....

Number of turns = .....  
(2 marks)

7
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**Turn over for the next question**

**Turn over ►**

