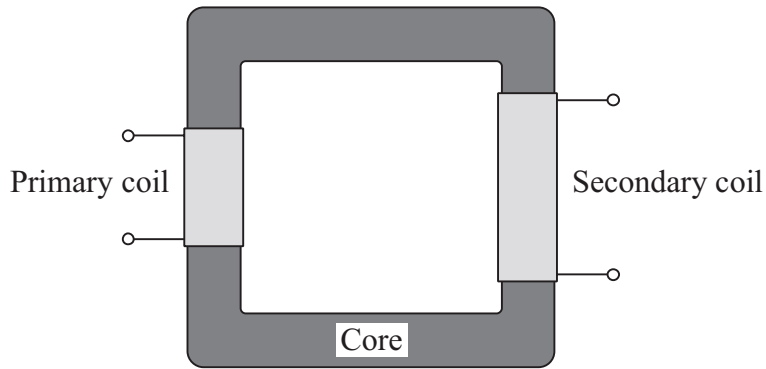


5 (a) The diagram shows the basic structure of a step-up transformer.



5 (a) (i) What is the core made of?

.....
 (1 mark)

5 (a) (ii) Explain how an alternating input produces an alternating output.

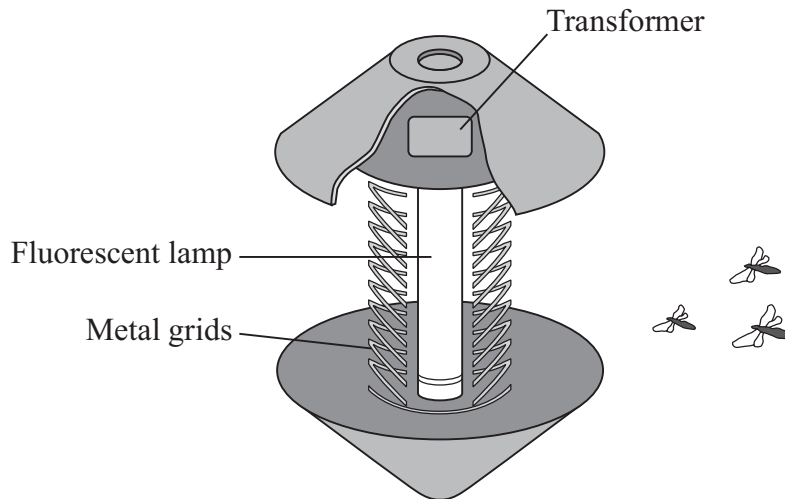
.....

 (3 marks)



- 5 (b) Fly killers are used in kitchens and food stores because flying insects carry diseases which cause food poisoning.

The diagram shows the inside of one design. Insects are attracted to a fluorescent lamp. The metal grids have a high potential difference (p.d.) between them. The insects are killed as they fly between the grids.



A transformer is used in the fly killer. There is a p.d. of 230 V across the primary coil. There are 300 turns of wire on the primary coil and 4000 turns on the secondary coil.

Use the equation in the box to calculate the p.d. across the 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.

.....

.....

.....

.....

.....

Potential difference = V
(3 marks)

7

Turn over ▶

