

9 (a) Define *magnetic flux*.

.....

.....

..... [2]

(b) A simple transformer consists of two coils of wire wound on a soft-iron core, as illustrated in Fig. 9.1.

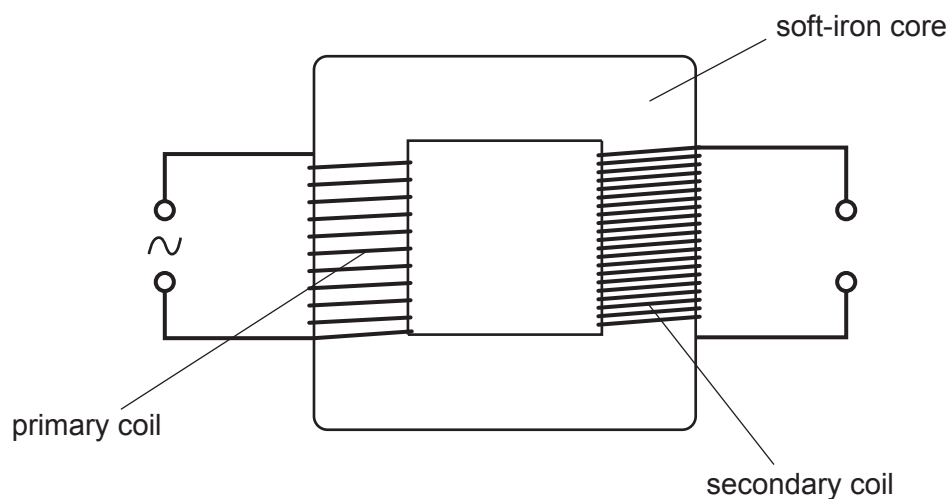


Fig. 9.1

There is a sinusoidal current in the primary coil.

Explain:

(i) how this current gives rise to an induced electromotive force (e.m.f.) in the secondary coil

.....

.....

.....

.....

..... [3]

(ii) why the e.m.f. induced in the secondary coil is not constant.

.....

.....

.....

..... [2]

(c) Explain why the soft-iron core in **(b)** is laminated.

.....

.....

..... [2]