

- 11 A bridge rectifier contains four ideal diodes A, B, C and D, as shown in Fig. 11.1.

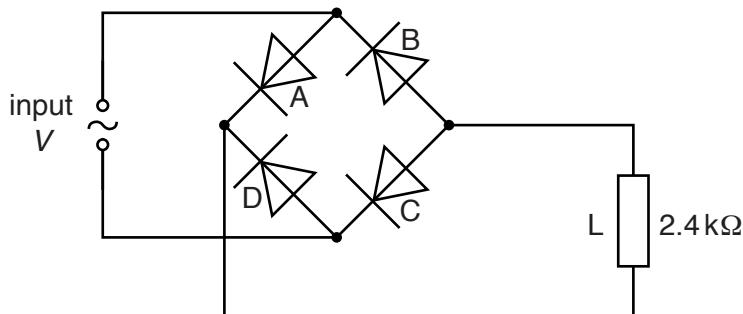


Fig. 11.1

The output of the rectifier is connected to a load L of resistance $2.4\text{ k}\Omega$.

- (a) On Fig. 11.1, mark with the letter P the positive terminal of the load. [1]
- (b) The variation with time t of the potential difference V across the input to the rectifier is shown in Fig. 11.2.

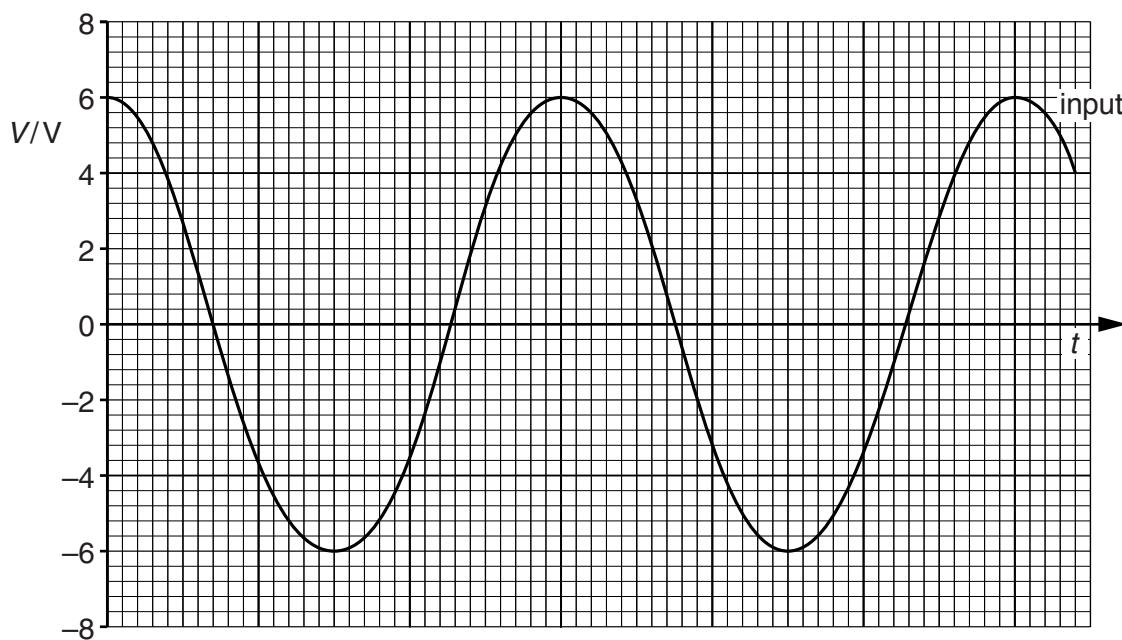


Fig. 11.2

Calculate the root-mean-square (r.m.s.) current in the load L.

$$\text{r.m.s. current} = \dots \text{A} \quad [2]$$

- (c) The potential difference across the load L is to be smoothed using a capacitor.
- (i) On Fig. 11.1, draw the symbol for a capacitor, connected to produce smoothing. [1]
- (ii) The minimum potential difference across the load L with the smoothing capacitor connected is 3.0 V.

On Fig. 11.2, sketch the variation with time t of the potential difference across the load L. [3]

[Total: 7]