

- 6 (a) Distinguish between *electromotive force* (e.m.f.) and *potential difference* (p.d.).

.....

 [2]

- (b) A battery of e.m.f. 12V and internal resistance $0.50\ \Omega$ is connected to two identical lamps, as shown in Fig. 6.1.

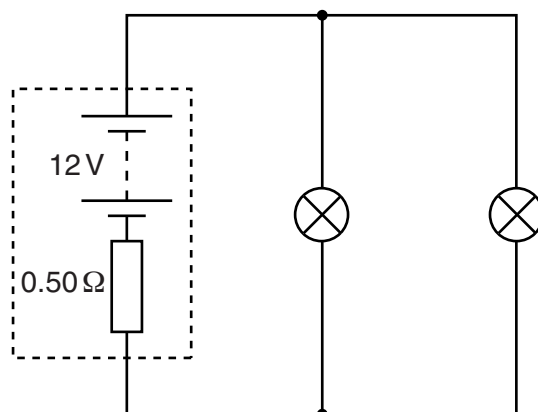


Fig. 6.1

Each lamp has constant resistance. The power rating of each lamp is 48W when connected across a p.d. of 12V.

- (i) Explain why the power dissipated in each lamp is not 48W when connected as shown in Fig. 6.1.

.....

 [1]

- (ii) Calculate the resistance of one lamp.

resistance = Ω [2]