6 A battery of electromotive force (e.m.f.) 9.0 V and negligible internal resistance is connected to resistors P and Q, a light dependent resistor (LDR) and ammeters A_1 and A_2, as shown in Fig. 6.1.

The resistance of P is $4.0\ \text{k}\Omega$ and the resistance of Q is $6.0\ \text{k}\Omega$.

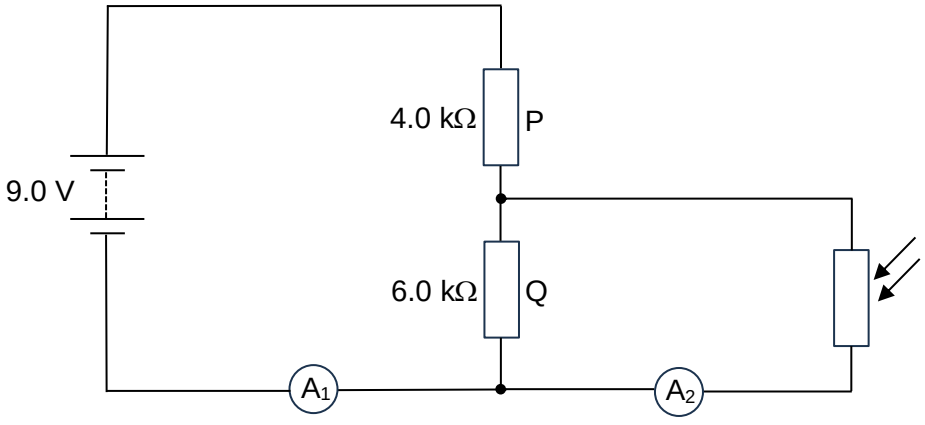

Fig. 6.1

(a) The intensity of the light incident on the LDR is such that the resistance of the LDR is $8.0\ \text{k}\Omega$.

Determine the current reading on

(i) ammeter A_1,

current = ... A [2]

(ii) ammeter A_2.

current = ... A [2]

(b) The intensity of the light incident on the LDR is lowered.

Explain the following changes:

(i) The potential difference across Q increases.

.....

.....

.....

.....

..... [2]

(ii) The current reading on ammeter A_2 decreases.

.....

.....

.....

.....

..... [2]

[Total: 8]