

- 6 Two metal plates X and Y are contained in an evacuated container and are connected as shown in Fig. 6.1. Metal plate X is then illuminated with monochromatic light.

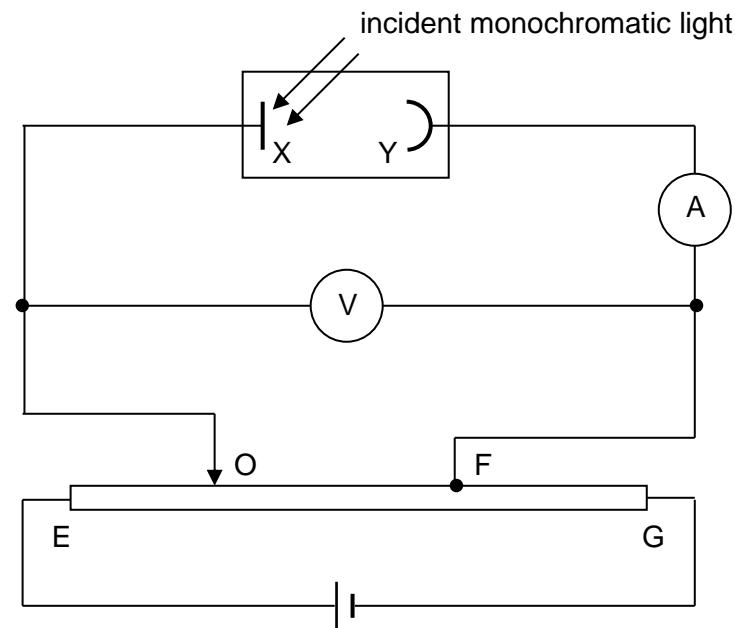


Fig. 6.1

The graph shown in Fig. 6.2 depicts the relationship between the voltmeter reading V and the ammeter reading I .

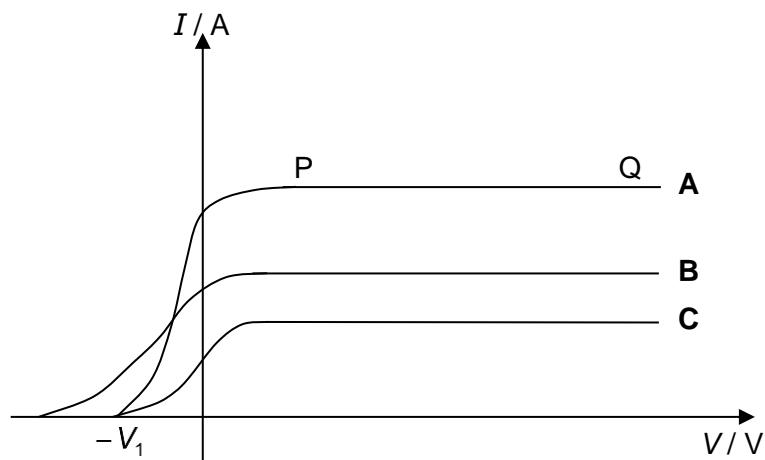


Fig. 6.2 (not to scale)

- (a) A student obtained the part PQ on graph A by shifting the sliding contact O.

State and explain where the position of O along EG should be shifted to for the student to obtain part PQ of graph A.

[4]

[4]

- (b) Given that the work function energy of X is 1.3 eV and the wavelength of the light is 550 nm, calculate the value of the stopping potential V_1 .

$V_1 = \dots$ V [2]

- (c) Describe the changes, if any, to the intensity and frequency of the incident monochromatic light that the student made to obtain graphs B and C if the same metal plate X is used.

graph B:

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graph C:

[2]

[Total: 8]