OCR
Oxford Cambridge and RSA

A level Physics B

H557/01 Fundamentals of physics

Question Set 36

1 (a) **Fig. 1.1** shows the voltage–current characteristic for an illuminated solar cell.

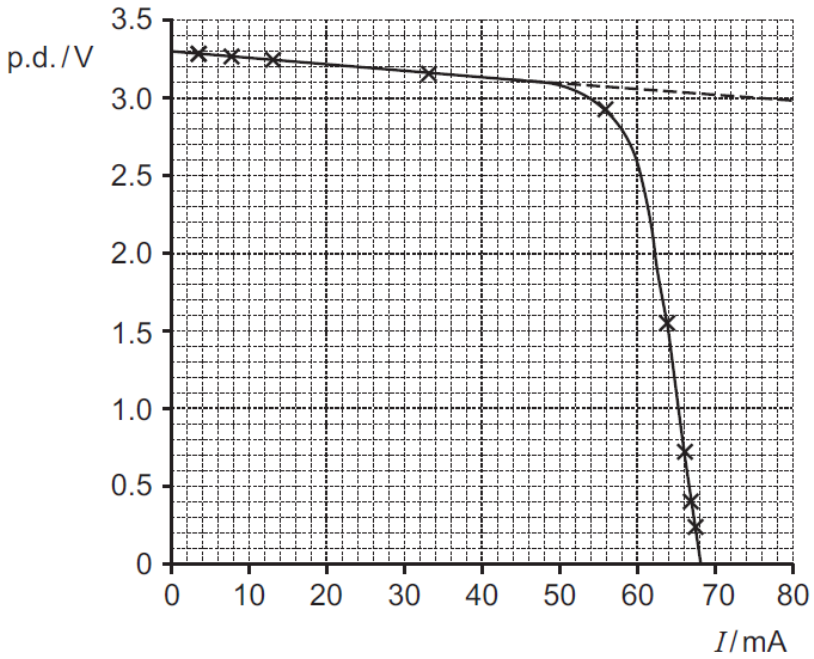

Fig. 1.1

(i) Use the initial gradient of the graph to calculate the internal resistance of the cell under this illumination.

internal resistance =……Ω

[1]

(ii) Calculate the maximum number of electrons per second that the cell can produce.

electrons per second =……s^{-1}

[2]

(iii) Suggest a reason for this maximum rate in the case of the solar cell.

[1]

(b)* Describe the experiment you would use to obtain the data to plot the graph in **Fig. 1.1**.

Include a circuit diagram with your method, give estimated values of circuit components, and explain any precautions you would take to ensure reliability.

[6]

Total Marks for Question Set: 10