Title and units (e.c.f.) on both axes (1)
Sensible scales (over half page used to plot the points; not multiplies of 3) (1)
All points plotted correctly to within ½ division (2)
(Penalise 1 mark for each incorrect plot to a maximum penalty of 2)
Good line of best fit consistent with data (1)

(d) (i) Calculate the gradient of the graph, including a suitable unit. [3]

Suitable triangle (at least half the graph), drawn on graph (1)
Gradient calculated correctly (1)
Unit given (1)

(ii) Hence find the resistivity of the wire given that its

$$\text{cross sectional area} = 5.73 \times 10^{-8}\,\text{m}^{-3}$$ [2]

gradient = $\frac{\rho}{EA}$ *[or by implication] (1)*

Resistivity calculated correctly with units (1)
[use of 1 data point to calc. resistivity instead of gradient – 1 mark only]

(e) (i) Write down the intercept of your graph, and by taking its uncertainty to be one small square of the graph paper, calculate the percentage uncertainty in the intercept. [2]

Intercept correct [no unit or s.f. penalty] (1)
% uncertainty correct (1)

(ii) Calculate the internal resistance of the cell. [1]

Internal resistance correct [no unit or s.f. penalty] ±5% of centre value

(iii) By considering the uncertainties in the e.m.f. and the intercept, find the absolute uncertainty in the internal resistance. [2]

Adding (e)(i) and (a)(iii) e.c.f. (1)
Absolute uncertainty correct and expressed to 1 s.f. [e.c.f. from first mark] (1)