1 **(a)** Define the *ohm*.

..... [1]

(b) An experiment is performed to determine the resistivity ρ of the material of a wire. The average of the measurements, with their actual uncertainties, are shown in Fig. 1.1.

potential difference/V	current/A	diameter of wire/mm	length of wire/cm
1.50 ± 0.01	0.32 ± 0.01	0.23 ± 0.01	40.0 ± 0.1

Fig. 1.1

(i) Calculate the value of ρ.

ρ = ... Ω m [4]

(ii) Calculate the actual uncertainty in ρ.

actual uncertainty in ρ = ... Ω m [2]

(iii) State the value of ρ and its actual uncertainty to the appropriate number of significant figures.

ρ = ... ± ..... Ω m [1]

(c) The accepted value for ρ is $4.4 \times 10^{-7}\,\Omega\,m$.
Use your answer in **(b)(iii)** to distinguish between *accuracy* and *precision*.

accuracy .....

.....

.....

precision .....

.....

.....

[2]