(e) (i) Large triangle used *(1)* (should be close to extremities of the line of best fit for wire starting at X) [or 2 equivalent suitable points clearly indicated on the graph].
Correct values used for gradient calculation. *(1)*
Gradient calculated correctly. *(1)* If wire starting at Y do not award this mark. [3]

(ii) Realising that gradient of the graph = $\frac{\rho}{A}$ (can be implied anywhere in the answer) or using data values from the line of the graph. *(1)*
Measuring the diameter of the wire starting at X. *(1)* No unit or sig fig penalty.
Correct calculation of the cross-sectional area. *(1)* No unit or sig fig penalty.
Calculating a value for resistivity. *(1)* No unit or sig fig penalty.
Penalise here for calculation errors e.g. powers of 10.
Correct conclusion that the wire is constantan. *(1)* Ignore errors of powers of 10. [5]
(Candidates need to calculate a value for resistivity before conclusion mark can be awarded.)

Total [24]

TEST 2 – Mark Scheme as TEST 1

Except:

A2*(c)* 2nd mark: Value of m = 0.160 kg. Unit required. *(1)* (Accept 0.155–0.165.)

