

Name: _____

Date: _____

Mr. Rawson



ISTANBUL
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Circuitry II Answers

1. A [1]
2. D [1]
3. C [1]
4. A [1]
5. (a) component X, battery, ammeter all in series and including means of varying current; with voltmeter in parallel across component X; 2
- (b) (i) 4.0 A; 1
- (ii) use of $R = \frac{V}{I}$, and **not** gradient of graph;
resistance = 1.5Ω; 2
- (c) (i) straight-line through origin, quadrants 1 or 3 or both;
correct gradient, *i.e.* passes through $V = 4.0$ V, $I = 2.0$ A; 2
- (ii) p.d.'s across X and across R will be 3.7 V (± 0.1 V) and 6.0 V;
Award [0] if only one p.d. is correct.
total p.d. = 9.7 V; 2
- (d) (i) large change in resistance with temperature change;
unique value of R at any temperature;
not dissipate thermal energy;
small physical size / small thermal capacity; 2 max
- (ii) measure resistance at two "known" temperatures;
divide scale into equally sized units;
any further detail
$$e.g. t/^{\circ} = \frac{(R_t - R_0)}{(R_{100} - R_0)} \times 100$$
 or scale is empirical (for this thermometer only) *or* fixed point specified; 3
- [14]