

Multiple Choice Answers

Q34: A

Q37: C

Multiple Choice Answers

Q37: A

Multiple Choice Answers

Q36: C

5(a)	<u>sum of</u> current(s) into junction = <u>sum of</u> current(s) out junction or (algebraic) sum of current(s) at a junction is zero
5(b)(i)	line with negative gradient line from 0 °C to 100 °C, starting at (0, R_0) with negative gradient throughout and never reaching $R = 0$
5(b)(ii)	(resistance of T decreases so) total resistance (of circuit) decreases current in cell increases (so p.d. across internal resistance increases) terminal p.d. decreases (and resistance of R is constant) so current in R decreases
5(c)(i)	p.d. across $r = 1.50 - (6.00 \times 0.200)$ (= 0.30 V) current in cell = $0.30 / 0.12$ = 2.5 A
5(c)(ii)	current in thermistor = $2.5 - 0.200$ (= 2.3 A) resistance of T = $(6.00 \times 0.200) / 2.3$ = 0.52 Ω

Multiple Choice Answers

Q36: B

Multiple Choice Answers

Q37: A

Multiple Choice Answers

Q35: C

Multiple Choice Answers

Q34: A

Q35: B

6(a)	$2.4 / 6.0 = 8 / (R + 8)$ $R = 12 \Omega$ or $I = 2.4 / 8$ = 0.30 $R = (6 - 2.4) / 0.3$ or $R = (6 / 0.3) - 8$ $R = 12 \Omega$
6(b)	$V = I (\rho L / A)$ or $V = IR$ and $R = (\rho L / A)$ I, ρ, A are constant (so $V \propto L$)
6(c)(i)	$V_{XP} / V_{XY} = L_{XP} / L_{XY}$ $E / 2.4 = 1.24 / 2.00$ $E = 1.5 \text{ V}$
6(c)(ii)	p.d. across XY / wire increases / p.d. across XP increases so P moved towards X / away from Y / to the left

Multiple Choice Answers

Q35: C