Multiple Choice Answers

Q35: D

Multiple Choice Answers

Q34: D

Multiple Choice Answers

Q33: A

Q37: A

5(a)	sum of current(s) into junction = sum of current(s) out junction **or** (algebraic) sum of current(s) at a junction is zero
5(b)(i)	(V =) $E - Ir$
	(V =) $5.0 - (38 \times 10^{-3} \times 4.7) = 4.8$ (V)
5(b)(ii)	$R_{(Z)} = 120\ \Omega$
	$I_2 = 38 \times 10^{-3} - (4.8 / (100 + 120))$
	$I_2 = 0.016$ A
	or
	$R_{(Z)} = 120\ \Omega$
	$R_{(EXT)} = 4.8 / 38 \times 10^{-3}$ (= 126 Ω) $1 / R_{(Y)} = 1 / 126 - 1 / (120 + 100)$ ($R_{(Y)}$ = 297 Ω) $I_2 = 4.8 / 297$
	$I_2 = 0.016$ A
5(b)(iii)	$P = IV$ **or** $P = I^2R$ **or** $P = V^2 / R$
	$P = 0.016 \times 4.8$ **or** $P = 0.016^2 \times (4.8 / 0.016)$ **or** $P = 4.8^2 / (4.8 / 0.016)$ $P = 0.077$ W
5(b)(iv)	resistance of the LDR / Z increases (as light intensity decreases)
	total resistance (of the circuit) increases **or** current in the battery decreases
	(potential difference across the internal resistor decreases so) the terminal potential difference increases

Multiple Choice Answers

Q37: C

Multiple Choice Answers

Q35: D

Multiple Choice Answers

Q36: C

Multiple Choice Answers

Q33: A

Multiple Choice Answers

Q34: B

Q36: B

7(a)(i)	(V =) 1.50 – 1.36 (= 0.14 V)
	current = V / R = 0.14 / 0.28 = 0.50 A
7(a)(ii)	resistance = V / I
	= 1.36 / 0.50 = 2.7 Ω
7(a)(iii)	R = 2.7 – 1.0 = 1.7 Ω
7(b)(i)	two resistors correctly shown in parallel with cell and no other components
7(b)(ii)	(external) resistance is now smaller **and** (so) current (in cell) is greater / (external) resistance smaller fraction of total resistance / internal resistance larger fraction of total resistance
	(greater p.d. across internal resistance so) terminal p.d. is less