Multiple Choice Answers

Q31: D

Multiple Choice Answers

Q32: D

Multiple Choice Answers

Q34: D

Multiple Choice Answers

Q30: B

6(a)	energy transferred (to the component) per (unit) charge
6(b)(i)	$Q = It$ $= 0.030 \times 4.0 \times 60$
	$= 7.2$ C
6(b)(ii)	$I = V / R$ $I_1 = 8.0 / (430+240)$
	$= 0.012$ A
6(b)(iii)	$I_2 = 0.030 - I_1$ $= 0.030 - 0.012$ $= 0.018$ A
6(b)(iv)	$R = V / I_2$ $= (8.0 - (0.018 \times 210)) / 0.018$
	$= 230\,\Omega$
	OR resistance of top branch = 8.0 / 0.018 $R = 8.0 / 0.018 - 210$
	$= 230\,\Omega$
	OR total circuit resistance = 8.0 / 0.030 = 267 $1 / 267 = 1 / (210 + R) + 1 / (430 + 240)$ $1 / 267 - 1 / 670 = 1 / (210 + R)$ $210 + R = 443$
	$R = 230\,\Omega$
6(c)	(When) the galvanometer reads 0 (A)
	The ratio of the resistances in the top branch will equal the ratio of the resistances in the bottom branch (so the resistance of X can be determined)
	OR The ratio of the left pair of resistances will equal the ratio of the right pair of resistances