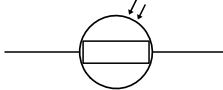


Practice test mark scheme Foundation

Q		Expected answers	Marks	Additional guidance
1	a	switch	1	all 3 required for mark
		battery bulb		
	b	Add an extra battery in series.	1	
		Increase the voltage of the battery.	1	
	c	A hot wire gives off light.	1	
		An electric current in a wire makes the wire get hot.	1	
	di	last symbol 	1	
dii	light	1		
e	electrons	1		
	negative	1		
	insulators	1		
			10	
2	a i	TV	1	
	a ii	No of kWh = 5 kW × 2 h = 10 kWh	1	
		cost = 10 × 12 p = 120p / £1.20	1	
	b	A house usually uses millions of joules of electrical energy.	1	
			4	
3	a	track	1	core must be labelled as iron for 2 nd mark
		motor	1	
		light	1	
	b	230 (volts)	1	
	c	two separate coils	1	
		a common iron core	1	
			6	

TOTAL 20

Practice test mark scheme Higher

Q		Expected answers	Marks	Additional guidance	
1	a	TV	1		
	b	No of kWh = 5 kW × 2 h = 10 kWh cost = 10 × 12 p = 120p / £1.20	1 1		
	c	A house usually uses millions of joules of electrical energy.	1		
			4		
2	a	potential difference	1	do not accept 'nothing'	
	b i	A and D	1		
	b ii	A and E or D and E	1		
	b iii	A and C or B and D	1		
	b iv	0	1		
	c	More energy is transferred when a charge passes through a larger resistance. The voltage is related to the energy transferred from the charge passing through a resistance.	1 1		
	d	V = I R so 6 V = 0.3 A × R R = 6 V / 0.3 A = 20 ohms	1 1		substitution evaluation
	e	any arrow indicating anticlockwise	1		
		10			
3	a	two separate coils a common iron core	1 1	core must be labelled as iron for 2 nd mark	
	b	$V_p/V_s = 230 \text{ V}/11.5 \text{ V} = 20$ $N_p/N_s = 20$ so $N_s = 600/20 = 30$	1 1		
	c	$P = 18.75 = 11.5 \times I$	1		
		$I = 18.75/11.5 = 1.63 \text{ amps}$	1		
			6		

TOTAL 20