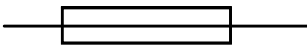


Household electricity

Mark scheme

1.	(a)	(i)	blue	1
		(ii)	earth	1
		(iii)	rubber / plastic	1
			<i>accept any suitable named non conductor eg polypropylene do not accept bakelite do not accept an insulator</i>	
		(iv)		1
	(b)	any two from:		
		•	draws too high a current <i>accept power for current do not accept electricity/ electric for current accept too much current goes through the socket do not accept too many currents go through the socket</i>	
		•	socket overloaded <i>it = socket do not accept circuit for socket</i>	
		•	wiring gets too hot / melts <i>accept socket for wiring do not accept fuse melts or blows do not accept plug/ appliances overheating</i>	
		•	(may) cause a fire	
		•	(may) cause sparking	
		•	(possible) physical damage to the socket <i>a physical reason, such as stick out from the wall is insufficient ignore reference to electric shocks</i>	2
				[6]
2.	(a)	alternates	<i>accept switches accept (constantly) changes; accept goes up and down</i>	1
			between positive and negative	1
	(b)	potential difference between the neutral <u>and</u> earth (terminal) <i>accept voltage for p.d</i>		
	or	potential of the neutral terminal with respect to earth 1		
	(c)	(i)	0.025 (s)	1
		(ii)	40 (Hz)	1
			<i>accept 1 ÷ their (a)(i)</i>	
				[5]

P2.4.1 Mark Scheme

3. (a) horse completes circuit between wire and earth **or** horse earths the wire 1
charge **or** electrons **or** current **or** electricity flows through the horse 1
- (b) **two** from: 2
- RCB breaks circuit when it detects a difference between currents in live and neutral wires
 - fuse breaks circuit only when fuse rating exceeded or when it melts
 - RCB is resettable
- (ii) 500 (ms) 2
leakage current = 0.02A 1 mark only

[6]