

M1.(a)	(i)	central block	1
	(ii)	conducts electricity	1
(b)		any two from:	
		• visual pollution	
		• noise pollution	
		• dust pollution	
		• habitat destruction.	2
(c)	(i)	to concentrate the ore / copper carbonate or to remove / separate the rock	1
	(ii)	12 (tonnes) <i>If answer is incorrect allow one mark for (127 + 132) – 247 or 259 - 247</i>	2
	(iii)	any one from:	
		• so no reactant is wasted / left unreacted	
		• so they know how much product they will make	
		• need to record / compensate for the carbon dioxide produced <i>allow so they can work out their carbon footprint.</i>	1
			[8]

- M2. (a) (i) A 1
- (ii) F 1
- (iii) E 1
- (iv) C 1
- (v) A or B 1
- (b) (i) Rb K Na
allow rubidium, potassium, sodium
*do **not** accept RB or NA* 1
- (ii) decrease
or
become lower / smaller / less
allow from 180° C to 27° C 1
- (c) They are harder than Group 1 metals. 1

They have higher melting points than Group 1 metals.

1

They often form coloured compounds but Group 1 compounds are usually white.

1

[10]

- M3.** (a) (i) elements 1
- (ii) atomic weight 1
- (iii) atomic (proton) number 1
- (b) (i) transition metals 1
- (ii) has a higher melting point is harder 2

[6]

- M4.** (a) tungsten 1
- has the high(est) melting point
*accept that metals other than tungsten
 are likely to melt* 1
- (b) argon 1
- is an unreactive gas
*accept that gases other than argon are reactive
 accept that argon is a noble gas or in Group 0* 1

[4]

M5.	(a) (good)conductor of electricity <i>conductor of electricity and heat (+/-) = 0</i> <i>accept can be drawn into wires or ductile</i> <i>ignore flexible</i>	1	
	(b) strong <i>accept tough or hard or high tensile strength</i>	1	
	(c) reference to <u>colour</u>	1	[3]
M6.	conducts heat <i>list principle applies after 4 ticks</i>	1	
	forms coloured compounds	1	
	high melting point	1	
	strong	1	[4]

M7.	(i)	zinc	<i>accept Zn</i>	1
		iron only	<i>accept Fe</i>	1
		copper	<i>accept Cu</i> <i>do not credit iron</i>	1
	(ii)	iron		1
	(iii)	copper or iron or manganese	<i>accept Cu or Fe or Mn</i>	1

[5]