

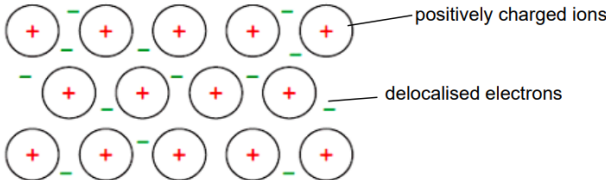
3. Chemical bonding

3.3 Metallic bonding

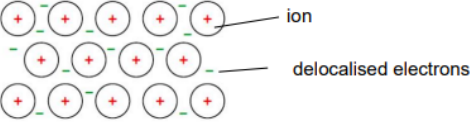
Paper 3

Marking Scheme

Q1.

(c)	 <p style="text-align: right; margin-right: 50px;">positively charged ions</p> <p style="text-align: right; margin-right: 50px;">delocalised electrons</p>	1
<p>labelled diagram shows:</p> <ul style="list-style-type: none"> regular arrangement of minimum of 2×2 circles containing + for positive ions AND surrounded by (sea of) delocalised electrons 		

Q2.

(a)	 <p style="text-align: right; margin-right: 50px;">ion</p> <p style="text-align: right; margin-right: 50px;">delocalised electrons</p>	1
<p>M1 diagram showing minimum of 4 particles (in total in two rows) (circles)</p> <ul style="list-style-type: none"> circles containing Mg^{n+} do not have to be labelled ⊕ must be labelled as 'ion' OR empty circles / circles with Mg must be labelled + ion / positive ion / cation / Mg^{n+} <p>AND</p> <ul style="list-style-type: none"> circles surrounded by electrons shown as $e^- / -$ <p>OR</p> <p>in an area around the circles labelled as 'electrons' OR little circles labelled electrons</p> <p>OR</p> <p>electrons drawn only on perimeter of structure</p>		
<p>M2 label / legend showing <u>delocalised</u> electrons</p>		1

Q3.

(c)	<table border="1" style="margin: auto;"> <thead> <tr> <th></th> <th>σ</th> <th>π</th> </tr> </thead> <tbody> <tr> <td>C_3H_6</td> <td style="text-align: center;">8</td> <td style="text-align: center;">1</td> </tr> <tr> <td>C_3H_6O</td> <td style="text-align: center;">11</td> <td style="text-align: center;">0</td> </tr> </tbody> </table>		σ	π	C_3H_6	8	1	C_3H_6O	11	0	2
	σ	π									
C_3H_6	8	1									
C_3H_6O	11	0									