

**GCSE Chemistry A (Gateway Science)**  
**J248/04** Chemistry A C4-C6 and C7 (Higher Tier)

**Question Set 20**

1 Chemical tests are used to identify gases, anions and cations.

- A student has an unknown solution.
- She thinks that the solution contains copper(II) ions and bromide ions.

Describe the chemical tests she does to confirm the presence of these two ions in the solution.

[4]

**Total Marks for Question Set 20: 4**

# Resource Materials

## The Periodic Table of the Elements

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(0)										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
<b>1</b> H hydrogen 1.0	<b>2</b> He helium 4.0	<b>3</b> Li lithium 6.9	<b>4</b> Be beryllium 9.0	<b>5</b> B boron 10.8	<b>6</b> C carbon 12.0	<b>7</b> N nitrogen 14.0	<b>8</b> O oxygen 16.0	<b>9</b> F fluorine 19.0	<b>10</b> Ne neon 20.2	<b>11</b> Na sodium 23.0	<b>12</b> Mg magnesium 24.3	<b>13</b> Al aluminium 27.0	<b>14</b> Si silicon 28.1	<b>15</b> P phosphorus 31.0	<b>16</b> S sulfur 32.1	<b>17</b> Cl chlorine 35.5	<b>18</b> Ar argon 39.9
<b>19</b> K potassium 39.1	<b>20</b> Ca calcium 40.1	<b>21</b> Sc scandium 45.0	<b>22</b> Ti titanium 47.9	<b>23</b> V vanadium 50.9	<b>24</b> Cr chromium 52.0	<b>25</b> Mn manganese 54.9	<b>26</b> Fe iron 55.8	<b>27</b> Co cobalt 58.9	<b>28</b> Ni nickel 58.7	<b>29</b> Cu copper 63.5	<b>30</b> Zn zinc 65.4	<b>31</b> Ga gallium 69.7	<b>32</b> Ge germanium 72.6	<b>33</b> As arsenic 74.9	<b>34</b> Se selenium 79.0	<b>35</b> Br bromine 79.9	<b>36</b> Kr krypton 83.8
<b>37</b> Rb rubidium 85.5	<b>38</b> Sr strontium 87.6	<b>39</b> Y yttrium 88.9	<b>40</b> Zr zirconium 91.2	<b>41</b> Nb niobium 92.9	<b>42</b> Mo molybdenum 95.9	<b>43</b> Tc technetium	<b>44</b> Ru ruthenium 101.1	<b>45</b> Rh rhodium 102.9	<b>46</b> Pd palladium 106.4	<b>47</b> Ag silver 107.9	<b>48</b> Cd cadmium 112.4	<b>49</b> In indium 114.8	<b>50</b> Sn tin 118.7	<b>51</b> Sb antimony 121.8	<b>52</b> Te tellurium 127.6	<b>53</b> I iodine 126.9	<b>54</b> Xe xenon 131.3
<b>55</b> Cs caesium 132.9	<b>56</b> Ba barium 137.3	<b>57-71</b> lanthanoids	<b>72</b> Hf hafnium 178.5	<b>73</b> Ta tantalum 180.9	<b>74</b> W tungsten 183.8	<b>75</b> Re rhenium 186.2	<b>76</b> Os osmium 190.2	<b>77</b> Ir iridium 192.2	<b>78</b> Pt platinum 195.1	<b>79</b> Au gold 197.0	<b>80</b> Hg mercury 200.6	<b>81</b> Tl thallium 204.4	<b>82</b> Pb lead 207.2	<b>83</b> Bi bismuth 209.0	<b>84</b> Po polonium	<b>85</b> At astatine	<b>86</b> Rn radon
<b>87</b> Fr francium	<b>88</b> Ra radium	<b>89-103</b> actinoids	<b>104</b> Rf rutherfordium	<b>105</b> Db dubnium	<b>106</b> Sg seaborgium	<b>107</b> Bh bohrium	<b>108</b> Hs hassium	<b>109</b> Mt meitnerium	<b>110</b> Ds darmstadtium	<b>111</b> Rg roentgenium	<b>112</b> Cn copernicium	<b>114</b> Fl flerovium	<b>116</b> Lv livermorium				

**Key**  
atomic number  
**Symbol**  
name  
relative atomic mass

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