Making salts – *Mark scheme*

1. (a) lead chloride } *in any order* 2
potassium nitrate }

for 1 mark each

(b) lead chloride is solid / a precipitate 2
potassium nitrate is aqueous / in solution / dissolves in water NOT liquid

for 1 mark each

(Accept ratio of molecular KNO_3 : $PbC1_2$ is 2:1 for 2 marks)
(do not accept relative number of atoms in each compound)

One is a solid, one is a solution - worth 1 mark

[4]

2. (i) to make sure all sulphuric acid reacts **or** to neutralise the acid 1
or unreacted sulphuric acid difficult to remove owtte

ignore 'to maximise the product'
accept otherwise (sulphuric) acid left

(ii) filter(ing) / filtration or described owtte 1

*accept use filter paper; accept centrifuge **and** decant*
*do **not** accept sieve / strain; filter funnel is insufficient*

(iii) no more solid / solute can dissolve 1

or maximum amount of solid owtte at that temperature 1

accept any link to temperature or any specified temperature

(iv) solubility decreases (as temperature falls) owtte 1

accept less soluble in cold water; answer must be linked to solubility; ignore the extra cannot dissolve

(v) otherwise get anhydrous $CuSO_4$ 1

accept otherwise get white $CuSO_4$;
accept do not get hydrated $CuSO_4$
*accept could get CuO **or** thermal decomposition / decomposes*
allow SO_3 / SO_2 produced; allow dehydration
accept removes the water of crystallisation
***not** just remove water from the crystals or just steam*

[6]

3. correct use of react/reaction/reactants NOT mixed added to join/combine/displace NOT equals

correct use of produce/products/gives/forms/makes/creates

reactants correctly identified

products correctly identified

(copper oxide reacts with sulphuric acid to produce copper sulphate and water, will be awarded all 4 marks)

for 1 mark each

Reactants must be correctly identified for 'react' mark to be given. Similarly for products

[4]