O Level Pure Chemistry MCQs

Salts Test 1.0

Q1

Which pair of reactants is best used to prepare the corresponding salt?

	reactant 1	reactant 2	salt
A	ammonium chloride	nitric acid	ammonium nitrate
B	barium carbonate	sulfuric acid	barium sulfate
C	copper	hydrochloric acid	copper(II) chloride
D	sodium hydroxide	sulfuric acid	sodium sulfate

Q2

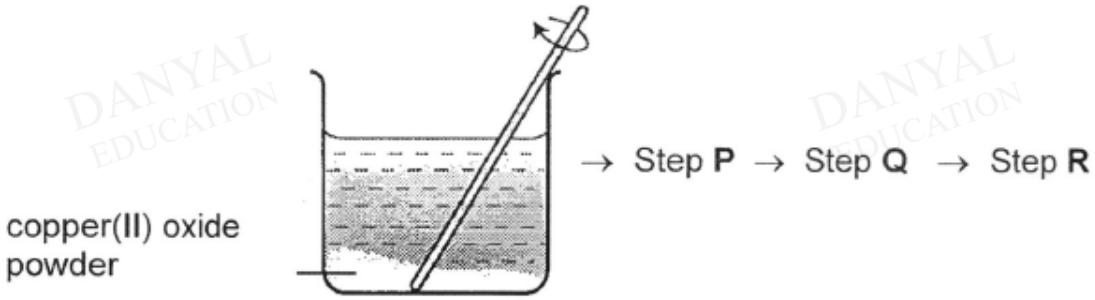
Which pair of reactants, when mixed, will react as shown in the ionic equation below?

$$Pb^{2+}(aq) + SO_4^{2-}(aq) \rightarrow PbSO_4(s)$$

A lead(II) chloride and sodium sulfate
B lead(II) nitrate and sulfuric acid
C lead(II) oxide and sulfuric acid
D lead(II) sulfate and water

Q3

The figure below shows excess copper(II) oxide powder after it has dissolved in dilute sulfuric acid. Starting from the beaker, which is the **correct** set of steps to obtain copper(II) sulfate crystals?



	Step **P**	Step **Q**	Step **R**
A	filtration	evaporation	cooling
B	cooling	filtration	evaporation
C	evaporation	cooling	filtration
D	filtration	cooling	evaporation

Q4

Which three salts are all prepared by precipitation?

A barium sulfate, calcium nitrate, lead(II) sulfate

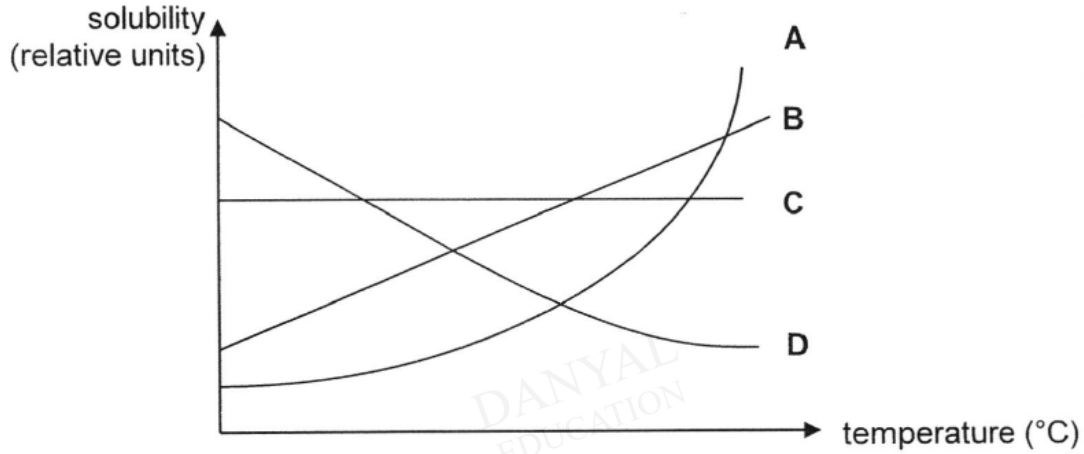
B barium sulfate, calcium nitrate, silver chloride

C barium sulfate, lead(II) sulfate, silver chloride

D calcium nitrate, lead(II) sulfate, silver chloride

Q5

The solubility curves for four solids, **A**, **B**, **C** and **D**, in water are shown below.
Which solid is most suitable to be prepared by crystallisation from its aqueous salt?



Q6

Gabriel was given four bottles containing colourless solutions of four compounds, labelled **X**, **W**, **Y** and **Z**. He mixed two different solutions together and obtained the following results.

solution	observations
X and **W**	no visible reaction
X and **Z**	white precipitate
W and **Y**	white precipitate
W and **Z**	white precipitate
Y and **Z**	effervescence

Which of the following correctly identifies each solution?

	solution **X**	solution **W**	solution **Y**	solution **Z**
A	calcium nitrate	potassium carbonate	sulfuric acid	barium nitrate
B	barium nitrate	calcium nitrate	potassium carbonate	sulfuric acid
C	sulfuric acid	barium nitrate	calcium nitrate	potassium carbonate
D	potassium carbonate	sulfuric acid	barium nitrate	calcium nitrate

Q7

In an experiment, five students each titrated 25.0 cm^3 of aqueous sodium hydroxide with dilute hydrochloric acid, using the same indicator.

The volume of hydrochloric acid used by each student is shown in the table.

student	I	II	III	IV	V
volume of dilute hydrochloric acid/ cm^3	19.4	19.5	19.4	19.5	21.0

Which statement explains the anomalous result obtained by student V?

A The burette was washed out with hydrochloric acid.
B The conical flask was washed out with aqueous sodium hydroxide.
C The pipette was washed out with aqueous sodium hydroxide.
D Too much indicator was added to the conical flask.

Q8

Which pair of reagents is most suitable in preparing the following salts?

	salt	reagent
A	ammonium nitrate	aqueous ammonia + nitric acid
B	lead(II) chloride	lead(II) oxide + hydrochloric acid
C	magnesium sulfate	magnesium nitrate + lithium sulfate
D	sodium chloride	sodium + dilute hydrochloric acid

Q9

Two reactions were allowed to take place as shown by the equations below :

Equation **I**: $AgNO_3(aq) + KCl(aq) \rightarrow AgCl(s) + KNO_3(aq)$

Equation **II** : $Pb(NO_3)_2(aq) + 2NaOH(aq) \rightarrow Pb(OH)_2(s) + 2NaNO_3(aq)$

The products shown in both equations **I** and **II** were mixed together.
Which of the following method is the best separation to obtain a sample of silver chloride from the mixture?

A Add aqueous ammonia to the mixture, filter to obtain the residue of silver chloride.
B Add excess dilute sulfuric acid to the mixture and filter the residue to obtain silver chloride.
C Decant off the aqueous layer and heat the residue to obtain the silver chloride.
D Filter the mixture and add excess dilute nitric acid to the residue. Filter to obtain the silver chloride.

Q10

Which method is used to prepare copper(II) chloride?

A adding copper to dilute hydrochoric acid at room temperature

B precipitating the salt by adding copper(II) carbonate to aqueous ammonium chloride

C titrating copper(II) hydroxide with dilute hydrochoric acid

D warming copper(II) oxide with dilute hydrochloric acid

Answers

Salts Test 1.0

Q1 D

Q2 B

Q3 A

Q4 C

Q5 A

Q6 B

Q7 B

Q8 A

Q9 D

Q10 D

Q2

Q3