SALTS

MARKING SCHEME

1. React dilute nitric acid with solid lead (II) carbonate to get lead (II) nitrate solution ✓ $^1/_2$

- Dissolve solid potassium sulphate in distilled water to get potassium sulphate solution ✓ ½
- React lead (II) nitrate solution with potassium sulphate solution to get a white precipitate of lead (II) sulphate ✓ 1
- Filter the mixture to get a residue of lead (II) sulphate and filtrate of potassium nitrate.
- Dry the residue lead (II) sulphate ✓ 1

2. (a) precipitation (double decomposition) (1mk)

(b) $Pb^{2+}_{(aq)} + SO_4^{2-}{}_{(aq)} \rightarrow PbSO_{4(s)}$ (1mk)

(c) An insoluble coating of $PbSO_{4(s)}$ would prevent contact of the metal with the acid and stop the reaction almost immediately. (1mk)

3. Add excess ✔ ½ copper turnings to 50% nitric acid. ✔ ½ Filter ✔ ½ to obtain Copper (II) Nitrate solution. ✔ ½ Add Sodium Carbonate ✔ ½ Solution and Copper (II) Carbonate will precipitate. Filter ✔ ½ and allow the residue to dry.

4. Insoluble lead (II) sulphate ✓1 coats the carbonate hence stops further action of the acid on the carbonate✓1.