# ❶•❷ Methods of purification and analysis

## MCQs

07ZZ01-05

**C**

Since the dyes were separated successfully and the solvents reached the end of the papers in the two chromatograms, the solvents are effective and sufficient.

However, the difference in positions of the dyes in the chromatograms indicates that different solvents have been used.

07ZZ01-06

**A**

Since both are liquids, using a separating funnel would be futile. As both liquids have the same boiling point, distillation would not be able to separate them too.

07ZZ01-07

**C**

For options A, B and C, silver chloride solid would be obtained after adding aqueous sodium chloride, which will contaminate the silver that we are trying to collect.

Adding nitric acid would form silver nitrate, which is soluble. Thus after filtration, only the silver metal would be left in the residue.

Note that silver metal does not react with acid to produce hydrogen gas.

07ZZ01-08

**D**

A: Both are solids, hence using a separating funnel would not be feasible.

B: Using the conventional way of heating (i.e. a Bunsen burner) would not be able to melt the solids as both are ionic compounds and thus have very high melting points.

C: Both solids will dissolve in the acid.

D: Water will dissolve sodium chloride but not copper(II) oxide. Thus the aqueous sodium chloride can now be removed via filtration and copper(II) oxide will be collected in the residue.

07ZZ01-09

**B**

Since there are four spots on Chromatogram 2, there must be four different types of ink in mixture Q.

07ZZ01-10

**D**

A: Both are in a solution, hence using filtration would not be feasible.

B: Ester cannot be crystallized, hence crystallization is not possible.

C: Chromatographic techniques are used to separate mixtures that contain chemically similar substances. Hence it is not applicable here.

D: Ester and water have different boiling points. Distillation can be used to separate the two.

07ZZ01-11

**C**

The chromatogram yields substances corresponding to the chromatograms of copper, nickel and zinc.

07ZZ01-12

**D**

A: Water will dissolve sodium chloride and would be in the filtrate after filtration. Evaporating the filtrate to dryness would then obtain only sodium chloride crystals.

B: Both sand and sodium chloride will be in the residue and sulphur would be in the filtrate. Sand and sodium chloride are not separated in this case.

C: After adding water and filtering, sodium chloride would be in the filtrate. Subsequent actions to the filtrate would not affect anything.