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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

D

For options A and B, silver chloride would be obtained after adding aqueous sodium chloride, which is insoluble in water.

For option C, dilute hydrochloric acid reacts with silver oxide to form silver chloride.

For option D, dilute nitric acid reacts with silver oxide to 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 dilute hydrochloric acid or dilute nitric acid.



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.

