YEAR 7 SCIENCE
CHEMICAL SCIENCES
REVISION - TEST 1

1. Replace each of the following expressions with a single word. Choose from:

   Solute Solvent Solution Emulsion Mixture Colloid Sediment Suspension Filtrate

   (a) Liquid in which a substance dissolves. Solvent
   (b) Insoluble particles dispersed in a liquid. Suspension
   (c) Liquid passing through filter paper. Filtrate
   (d) Substance that dissolves in a liquid. Solute
   (e) What is formed when a solute dissolves in a solvent? Solution
   (f) An insoluble substance that sinks to the bottom. Sediment

2. (a) Is fizzy soft drink a solution, solvent or solute?
   (b) List the solutes likely to be found in a bottle or can of fizzy soft drink.

   - Sugar
   - Colouring
   - Flavouring

3. (a) What is the difference between a ***dilute*** and ***concentrated*** solution?

   Dilute: add lots of water.

   Concentrated: don't have a lot of water (more solute or substance added).

   (b) What substance should you add to salt water to make it:

   (i) more concentrated? salt
   (ii) less concentrated? water

4. (a) What is the difference between a ***pure substance*** and a ***mixture***?

   Pure substance: made up of only 1 type of substance or material or stuff or ....

   Mixture: made up of more than one substance.

   (b) Which of the following are ***pure substances***? (Underline them.)

   Sea water Air Ice Coca Cola
   Plastic in a chair - no - it has colour added.

5. (a) Define the terms ***solute*** and ***solvent***.

   Solute: substance that dissolves in a liquid.

Solvent: liquid that does the dissolving or dissolves a substance.

(b) Apply your definitions to a cup of black tea. i.e. Name the solute and the solvent.

Solute: tea Solvent: water

6. Summarise the following separating processes briefly, stating when to use each one and what is separated.

- Sieving - use a mesh to have large bits stay behind and small bits fall through.
- Filtering - use paper to catch solids that didn't dissolve in a liquid.
- Magnetic - use magnet to attract metals such as iron and steel.
- Decanting - pour off the liquid and leave the solid behind.
- Evaporating - heat the solution and drive water out.
- Distilling - heat the solution and leave the solid behind, and condense the liquid in another container.
- Chromatography - separate pigments in inks from each other.

7. Describe a possible method to separate the following mixtures.

(a) Sand and salt in water.
- Filter to get the sand.
- Evaporate or distil to get the salt.

(b) Iron filings in sand.
- Use a magnet to get the iron filings.

(c) Sugar dissolved in water.
- Evaporate or distil to get the sugar.

(d) Dust from air.
- Filter to collect the dust.

(e) Oil and water.
- Scrap, absorb or suction the oil from the surface.

8. A student is given a mixture of iron filings in a beaker of copper sulphate ($CuSO_4$) solution. Her teacher has asked her to separate each of the components (iron filings, $CuSO_4$ and water) and collect them.

   Describe (in dot-point form) how she should do this, listing each separation technique required. At each step, list the substance recovered.

   - Use a magnet to pick up the iron filings, or filter to collect the iron filings.
   - Distil to get the copper sulphate in one container and the water in another.
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