

Name: _____

Block: _____

Date: _____

Chemistry 11

Mixtures Worksheet

Assignment

1. Identify each of the following substances as pure substances, heterogeneous mixtures, or homogeneous mixtures.

Heterogeneous

alphabet soup

Pure substance

salt

Heterogeneous

concrete

Homogeneous

vegetable oil

Homogeneous

air

Heterogeneous

paint

Heterogeneous

granite

Pure substance

sugar

2. True/False Questions

a. Drinking water can only be obtained from seawater by distillation. True/False

b. The distillation of miscible liquids is only possible if the liquids have different boiling points. True/False

c. Paper chromatography is a physical method for separating mixtures. True/False

d. Mixtures have fixed melting and boiling points. True/False

3. Fill in the Blanks: Complete the following sentences by filling in the appropriate word from the list below. Each word can be used once, more than once, or not at all.

filtration

crystallization

chromatography

electrolysis

distillation

a. Heterogeneous mixtures are often separated by filtration.

b. Separating sand from water is done by filtration/distillation.

c. The sugar in sugar water can be removed by distillation/crystallization.

d. The separation technique that takes advantage of different boiling points is called distillation.

e. Removing chlorophyll pigment from leaves might be done by chromatography.

f. The best way to decompose water into oxygen and hydrogen is by electrolysis.

g. Crude oil is broken down by heat, vaporized, and allowed to condense into various liquids such as gasoline. This process is called distillation.

4. Name the techniques which are suitable for separating the following mixture:

	Situation	Separation Technique(s)
a.	To obtain drinking water from muddy water	filtration/distillation/centrifugation
b.	To separate petrol from crude oil	distillation
c.	To remove leaves from a swimming pool	filtration/mechanical separation
d.	To obtain pure sugar from a solution	distillation/evaporation
e.	To determine whether the colouring in a fruit juice is a single substance or a mixture of coloured substance	chromatography

5. How would you separate a mixture of iron filings and aluminum filings? _____ use a magnet to remove the iron filings, leaving the aluminum filings behind _____

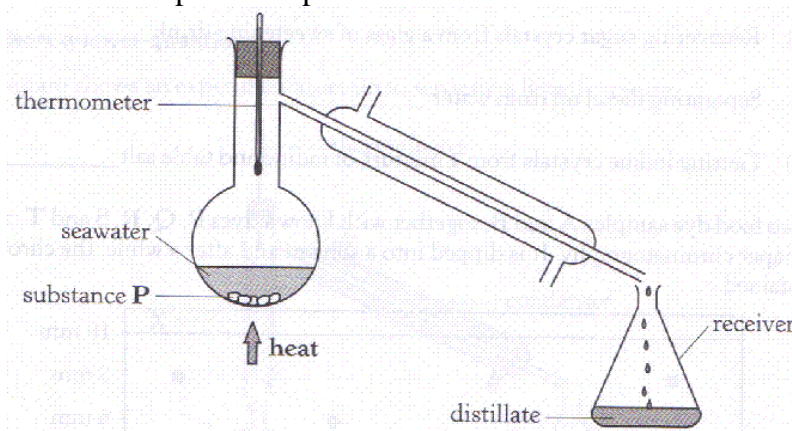
6. You are asked to separate sand and sodium chloride. Name the methods needed to carry out the procedure. Explain how you would carry out the procedure to obtain pure sand and sodium chloride back.

extraction (dissolve sodium chloride in water and then filter out sand/then use either evaporation/recrystallization or distillation to remove the water from the sodium chloride)

7. Could distillation be used to separate air into oxygen, nitrogen, carbon dioxide, argon and so forth? Explain.

Yes, however gases must be cooled to their boiling points and then gases condense at different temperatures. _____

8. The following diagram shows a set up of a simple distillation.



a) Identify the distillate collected in the receiver. How would you determine that the distillate collected is a pure substance?

Water. If it is a pure substance, it will have one set of properties (ie. boiling point, density etc.)