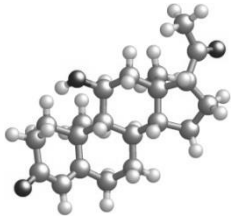
SCHOOL OF SCIENCE AND TECHNOLOGY, SINGAPORE



Chem!stry

Name: _____ **( )**

Class: _____

Date: ____ / ____ / ____

1. Find someone who can describe the chemical tests to identify; $Al^{3+}(aq)$, $Ca^{2+}(aq)$, $Cu^{2+}(aq)$, $Fe^{2+}(aq)$, $Fe^{3+}(aq)$, $NH_4^+(aq)$, $Pb^{2+}(aq)$ and $Zn^{2+}(aq)$.	**2.** Find someone who can calculate the volume of 0.1 mol/dm^3 NaOH(aq) required to exactly neutralise 37.0 cm^3 of 0.2 mol/dm^3 $H_2SO_4(aq)$.	**3.** Find someone who can explain how strong acids and weak acids are; **i)** similar to each other, **ii)** different from each other.	**4.** Find someone who can describe the chemical tests for; $Cl^-(aq)$, $CO_3^{2-}(aq)$, $NO_3^-(aq)$, $SO_4^{2-}(aq)$ and $NH_4^+(aq)$.	**5.** Find someone who can describe, *including balanced chemical equations*, the extraction of iron from iron(III) oxide in the blast furnace.
6. Find someone who can describe the chemical tests for; $Cl_2(g)$, $CO_2(g)$, $H_2(g)$, $NH_3(g)$, $O_2(g)$ and $SO_2(g)$.	**7.** Find someone who can name the main atmospheric pollutants and explain why they are harmful to living organisms and the environment.	**8.** Find someone who can **i)** describe the bonding in diamond and graphite, **ii)** compare and explain the physical properties of diamond and graphite.	**9.** Find someone who can describe, *with examples*, the typical reactions of acids.	**10.** Find someone who can; **i)** describe the bonding in CO_2 and SiO_2, **ii)** compare and explain the physical properties of CO_2 and SiO_2.
11. Find someone who can explain whether a gas jar containing $O_2(g)$ and $O_3(g)$ holds a pure substance or a mixture.	**12.** Find someone who can describe how the chemical properties and physical properties of the *Group I* elements change with increasing atomic number.	People Bingo! Secondary 3 Chemistry	**13.** Find someone who can calculate the true molecular formula of a compound that is 55.2 % K, 14.6 % P and 30.2 % O.	**14.** Find someone who can sketch and fully label the energy profile diagram for an *endothermic* reaction.
15. Find someone who can explain the "*carbon cycle*".	**16.** Find someone who can sketch and fully label the energy profile diagram for an *exothermic* reaction.	**17.** Find someone who can; **i)** describe the bonding in magnesium chloride, **ii)** describe and explain the physical properties of magnesium chloride.	**18.** Find someone who can describe how the chemical properties and physical properties of the *Group VII* elements change with increasing atomic number.	**19.** Find someone who can sketch and explain the cooling curve for H_2O as it is cooled from +120°C to –20°C.
20. Find someone who can recall the reactivity series of metals, including carbon and hydrogen.	**21.** Find someone who can explain how to make a pure, dry sample of copper(II) carbonate.	**22.** Find someone who can calculate; **i)** mass of $H_2O(l)$, **ii)** volume of $CO_2(g)$ produced when 66.0 g of propane (C_3H_8) undergoes complete combustion.	**23.** Find someone who can explain how to separate a mixture of; ammonium chloride, copper(II) sulfate, iron, diesel oil, sand and water.	**24.** Find someone who can define the terms; **i)** allotrope, **ii)** isotope, **iii)** isomer.