

1 (a). Using a word processing package, type the passage below as it appears and save it as A:\CHEMICALSDOC1

(31 marks)

CHEMICAL REACTIONS AND EQUATIONS

Chemical reactions

In form 1 we discussed about mixtures and how they can be separated. A mixture can be separated by physical means as it is formed through a physical or temporary change. A compound is formed by a chemical or permanent change.

Differences between physical and chemical changes

Physical change	Chemical change
No new substance is formed	New substance is formed with different chemical properties
Easily reversible	Not easily reversible
Not accompanied by great energy changes	Accompanied by great energy changes
There is no change in mass	There is change in mass

We can represent a chemical change by use of a chemical equation. A chemical equation is a quantitative summary of investigation into a chemical reaction. It shows how the items are arranged in a given reaction. The equation can be represented using names of reactants and products. This is a word equation. For example when sulphur burns in oxygen, it can be represented as;



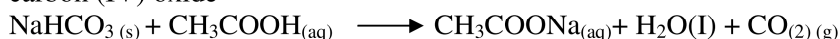
When chemical symbols and formulae are used to write the equation, it is called a chemical equation.

A chemical equation has the following:

- Reactants are written on the left of the arrow. Reactants are substances that go
- through a chemical change
- Products are written on the right of the arrow. Products are the new substances formed after a chemical change
- The physical state at which the substances are is also indicated using a small letter in brackets as shown below.
- Symbols of elements and formulae of compounds must be correctly represented
- The equation must be balanced since according to the Law of Conservation of Matter, atoms cannot be created nor destroyed
- The plus + sign on the left means it "reacts with" the arrow \longrightarrow means "to form" and the plus + sign on the right means "and"

For example

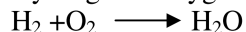
Sodium hydrogen carbonate + Ethanoic acid \longrightarrow Sodium ethanoate solution + water + carbon (IV) oxide



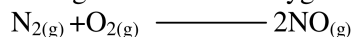
Examples of equations

Write a word and a chemical equation to show burning of hydrogen in air

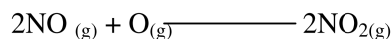
Hydrogen + oxygen \longrightarrow water



Nitrogen reacts with oxygen at high temperatures to form Nitrogen 11 Oxide



Nitrogen (II) oxide is immediately reacts with air to form brown fumes of Nitrogen oxide.



- b). i). spell check the passage (2 marks)
 ii). Select the second paragraph and set the line spacing to 2, and fully justify (6 marks)
 iii). Indent the first line of the second paragraph starting “We can represent a chemical change by use of a chemical” by 1.2 cm (or 0.47”) (2 marks)
 iv). Change the character spacing for the heading “**Chemical reactions**” to expanded. Save the changes as A:\chemical2 (2 marks)

Ci). i). retrieve Chemicalsdoc1 and add the following text (6 marks)

Uses of sulphur

- It is used as a medicinal drug to treat fungal infections in the skin.
- it is used as an insecticide.
- it is used in the manufacture of carbon disulphide.
- it is in the manufacture of sulphuric acid.
- it is used in the hardening of rubber to make it more useful. This is called vulcanization.
- it is used in the manufacture of metals, gun powder, explosives and fire wax.
- it is used in the manufacture of sodium thiosulphate used in photography.
- used in the manufacture of artificial hair dyes.
- manufacture of calcium hydrogensulphate for bleaching wood pulp.

- ii). Save the changes as A:\chemicals3 (1 mark)