

FIRST TERM E-LEARNING NOTE

SUBJECT: CHEMISTRY

CLASS: SSS3

SCHEME OF WORK

WEEK	TOPICS
1	Revision, Saturated Hydrocarbon Alkanes e.g Methane CH_4 – preparation, properties and uses, isomerism, IUPAC, Nomenclature.
2	Unsaturated hydrocarbon – Alkenes e.g ethane (C_2H_2) – Nomenclature, preparation, properties and uses.
3	Unsaturated Hydrocarbons, Alkynes e.g ethyne (C_2H_2)-Nomenclature, preparation, properties and uses.
4-5.	Aromatic hydrocarbon, Benzene-structure, properties and uses, derivatives of Benzene e.g methyl benzene. Alkanols – sources, general molecular formula, nomenclature, classification, types, preparation, properties and uses. Test for alkanols.
6.	Alkanoic acids - sources, nomenclature, structure, preparation, properties and uses. Alkanoates, general molecular formula, nomenclature, preparation, properties and Uses.
7.	Fat and Oil as higher Esters, sources, properties and Uses. Detergents and Soaps - Structure, their mode and action.
8.	Natural and synthetic polymers, polymerization (additional and condensation), plastics – Thermoplastic and Thermosetting polymers, Resins.
9.	Carbohydrates - sources, general molecular formula, classification, properties and uses. Test for carbohydrates. Proteins – sources, structure, properties and uses, tests for proteins.
10.	Amines and Amides , general molecular structure, preparation, properties and Uses.
11.	Revision.
12.	Examination.

Reference Book

New School Chemistry for Senior Secondary Schools by Osei Yaw Ababio.

Practical Chemistry for Senior Secondary Schools by Godwin Ojokuku

Outline Chemistry for Schools & Colleges by Ojiodu C. C.

Chemistry Pass Questions for S.S.C.E and UTME.

WEEK ONE

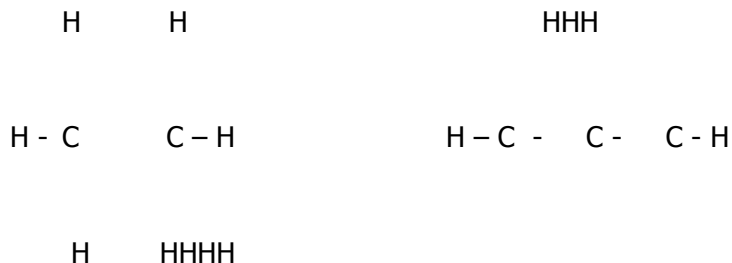
Topic: Saturated Hydrocarbons

Content: Alkanes e.g methane (CH_4)

- preparation – properties - Uses
 - Isomerism
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Saturated Hydrocarbons

Saturated hydrocarbons are hydrocarbons consisting of carbon chains with single bond between them in which carbon joins with another carbon by single covalent bond e.g Alkanes (like ethane C_2H_6 , propane C_3H_8)



Alkanese.g Methane (CH_4)

The alkanes are aliphatic hydrocarbons. They form homologous series of saturated hydrocarbons with general molecular formular of C_nH_{2n+2}

EVALUATION

1. What is saturated hydrocarbons?
2. Name one example of alkanes.

Preparation of Methane (CH_4).

Methane is prepared in the laboratory by heating ethanoate salt with corresponding alkalis e.g Sodium ethanoate and soda-lime.

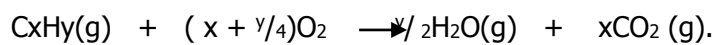
Physical Properties

1. Methane is a colourless and odourless gas
2. It is slightly soluble in water.
3. It is less dense than air
4. It has no action on litmus paper

Chemical Properties.

1. Combustion:- Methane burns in air or oxygen to produce steam, carbon(iv) oxide and a lot of heat $\text{CH}_4 + 2\text{O}_2 \rightarrow 2\text{H}_2\text{O} + \text{CO}_2$.

The general equation of alkanes for combustion is represented as



2. Substitutional reaction:- With chlorine gas and bromine gas usually in the presence of ultra-violet light (as catalyst).

Uses

1. Methane is used as fuel
 2. It is used for...
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