

JAMB Chemistry Syllabus by Studentmajor.com

1. Introduction to Chemistry (including, definition and Matter)
2. Separation Techniques and process
3. Purification of chemical substances.
4. Types of Changes in chemistry
5. Melting, Boiling, vaporization, freezing and condensation.
6. Chemical combination
7. Stoichiometry
8. Gas Laws
9. Chemical formulas, symbols and equations
10. Kinetic theory of matter.
11. Atomic structure and Chemical bonding
 - Atom
 - Elements
 - Compounds
 - Mixtures
 - Ions (Protons, Electrons and Neutron)
 - Nucleus
 - electron configuration
 - Isotopic
 - Valency
 - oxidation states
 - complex ion formation
 - formation of coloured ions
 - catalysis
12. Nuclear Chemistry (Read and understand the properties of Radioactivity and Nuclear reactions)
13. Air: Read everything about natural gases like oxygen, nitrogen, carbon (IV) oxide and other noble gases.
14. Water
15. Solubility

- Saturated
- Unsaturated,
- Supersaturated solutions.
- Fats and oil, and paints
- False solution (colloids and Suspensions):

16. Pollution (Sources, Causes, effects, types and controlling methods of Environmental, Air, Water and Soil pollution) Controlling methods for Biodegradable, Oil spillage, and non-biodegradable pollutants.

17. Acids, bases and salts:

- pH of solution and pH scale
- (d) Titrations.
- (e) Hydrolysis

18. Reduction and Oxidation (oxidizing and reducing agents and reactions) and IUPAC nomenclature.

19. Electrolysis (Electrolytes and non-electrolytes) Faraday's laws of electrolysis, Electrochemical cells, and Corrosion of metals.

20. Energy changes ΔH (Entropy and Enthalpy) Spontaneity of reactions: ΔG .

21. Rates of Chemical Reaction (Temperature, Concentration, Surface Area and Catalyst)

22. Chemical equilibrium

23. Periodic Table

24. Non-metals: Study the properties laboratory preparation of the following Non-metals and compounds.

- Hydrogen
- Oxygen
- Sulphur
- Nitrogen
- liquid air
- Ammonia
- Trioxonitrate (V) acid:
- Oxides of nitrogen
- Carbon
- Allotropes
- Carbon(IV) oxide
- Carbon(II) oxide
- Coal
- Coke

25. Metals: Study the properties and laboratory preparation of the following metals and compounds.

- Properties of metals
- Alkali metals
- Sodium hydroxide
- Metallic hydroxides.
- Sodium trioxocarbonate (IV)
- Sodium chloride:
- Alkaline-earth metals.
- Extraction of Tin
- First series transition Metals.
- Transition Metals
- Copper
- Alloy Steel,
- stainless steel,
- brass,
- bronze
- duralumin,
- soft solder,
- alnico and permallory

26. Organic Compounds

- Allotropes of Carbon
- Tetravalency of carbon
- IUPAC nomenclature
- Empirical formula of organic compounds
- Aliphatic hydrocarbons.
- Physical & chemical properties, reactions and structure of Alkanes, Alkenes, Alkynes, Alkanols, Alkanals, alkanones, Amines (Alkanamines), Alkanoic acids, Alkanoates, etc.)
- Isomerism
- Homologous series.
- Aromatic hydrocarbons (e.g benzene)
- Ethyne

27. Petroleum and Petrochemicals

28. Carbohydrates: mono-, di- and polysaccharides.

29. Proteins: structures, tests and hydrolysis

- Enzymes.
- Polymers:

30. Industrial Chemistry: Chemical industries, raw materials, Biotechnology, heavy chemicals.

JAMB Recommended Textbooks for Chemistry 2021 and Area of concentration

- New School Chemistry by Ababio
- Senior Secondary Chemistry, Books 2 & 3 by Bajah, Teibo, and Co.
- Understanding Chemistry by Ojokuku (for Schools and Colleges)
- 2nd Edition: Chemistry for Senior Secondary Schools by Odesina
- Countdown to WASSCE/SSCE, NECO, JME Chemistry by Uche, Iwuagwu and Adenuga.

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