CHEMISTRY DEFINITIONS AND TERMS FOR SCHOOL CERTIFICATE

1. Diffusion is the spreading out of particles from a region of higher concentration to a region of lower concentration.
2. The total number of protons in an atom is called the atomic number or proton number, Z.
3. The total number of protons and neutrons altogether is called the mass number or nucleon number, A, of the atom.
4. Isotopes are atoms of the same element which have the same atomic number but different mass numbers, because their numbers of neutrons differ.
5. An element is a pure substance which cannot be split up into other simpler units by any ordinary chemical process.
6. A compound is a pure substance which contains two or more elements chemically combined together in a fixed proportion.
7. A mixture is an impure substance which contains two or more elements or compounds in proportions which may vary.
8. The relative atomic mass (A_r) of an element is the average mass of an atom in a normal isotopic mixture of the element, compared to an atom of carbon-12, which is assigned the value of exactly 12.
9. The relative molecular mass (M_r) of a compound is the mass of one molecule of the compound compared to the mass of one atom of carbon-12, which is assigned the value of exactly 12.
10. The empirical formula of a compound is the simplest formula of the compound which shows the simplest ratio (by moles) in which the atoms combine.
11. The molecular formula of a compound shows the actual number of each type of atoms in the compound.
12. An electrolyte is an ionic compound, which is molten or dissolved in water.
13. Electrolysis is the conduction of electricity by an electrolyte, leading to its decomposition.
14. An exothermic reaction is one in which heat is given out to the surroundings.
15. An endothermic reaction is one during which heat is absorbed from the surroundings.
16. A catalyst is a substance which increases the rate of a chemical reaction without itself undergoing any permanent chemical change.
17. An enzyme is a biological catalyst.
18. Oxidation can be defined as the:
    a. addition of oxygen
    b. loss of hydrogen
    c. loss of electrons
    d. increase in oxidation number.
19. Reduction can be defined as the:
    a. removal of oxygen
    b. gain of hydrogen
    c. gain of electrons
    d. decrease in oxidation number.

20. A redox reaction is said to occur when an electron is transferred from one reactant to another, or when the oxidation state of one reactant increases and that of the other reactant decreases.
21. A reversible reaction is one which can be made to go forward or backward by changing the conditions of the reaction.
22. A state of dynamic equilibrium is reached when the speed of the forward reaction is equal to that of the backward reaction.
23. An indicator is a substance which has one colour in very acidic solutions and another colour in very alkaline solutions.
24. An acid is a compound which produces hydrogen ions, H^+, as the only positive ion when dissolved in water.
25. A strong acid is one which dissociates completely to produce H^+ ions in water.
26. A base is a compound which reacts with the H^+ ion of an acid to form a salt and water only.
27. An alkali is a basic hydroxide which is soluble in water.
28. An amphoteric oxide is one which reacts with both acids and alkalis.
29. A salt is a compound formed when the hydrogen ions of an acid are partly or completely replaced by a metallic ion or an ammonium ion.
30. A hydrated salt is one that contains water of crystallisation, which is necessary to create the crystalline shape of some crystals.
31. An anhydrous salt is one which lacks water of crystallisation.
32. Eutrophication means an increase in chemical nutrients in water bodies.
33. The Periodic Table is the arrangement of the elements in the order of increasing proton number.
34. Transition elements are those elements in the central block of the Periodic Table that do not belong to any Group.
35. An alloy is a mixture of a metal with another element.
36. The reactivity series is a series of metals in order of reactivity, from highest to lowest.
37. An ore is a naturally occurring mineral from which a metal can be extracted.
38. Hydrocarbons are organic compounds that contain only carbon and hydrogen.
39. A homologous series is a group of compounds with a general formula, similar chemical properties but showing a gradation in physical properties.
40. A compound is said to be unsaturated when it contains a carbon-carbon double bond in its molecule.
41. An addition reaction is one in which two compounds, among which one is unsaturated, react to form a single product.
42. Isomerism is the phenomenon whereby the same molecules have different structural or spatial arrangements.
43. Polymers are large molecules built up from many hundreds or thousands of small, monomer units joined together.
44. Addition polymerisation is a process by which a polymer is formed from unsaturated monomers which join together to form a single, large molecule.
45. Condensation polymerisation is a process during which a polymer is formed, with the elimination of small molecules of water or hydrogen chloride.