Definition
Form 4

1. Matter

-- Matter is anything that occupies space and has mass.

2. Melting

-- Melting is the ***process*** where a solid changes to its liquid state at a certain temperature and pressure when heat is applied to the solid.

3. Melting point

-- Melting point is the ***temperature*** at which the solid changes into the liquid state at a certain pressure.

4. Boiling

-- Boiling is the ***process*** where a liquid changes to its gaseous state at a certain temperature and pressure when heat is applied to it.

5. Boiling point

-- Boiling point is the ***temperature*** at which the liquid changes into the gaseous state a certain pressure.

6. Evaporation

-- Evaporation is the process which liquid changes into the gaseous state at any temperature.

7. Proton number

-- Proton number of an element is the number of protons found in the nucleus of the atom.

8. Nucleon number

-- Nucleon number of an element is the total number of protons and neutron found in the nucleus of the atom.

9. Isotopes

-- Isotope**s** are atom**s** of the same element with the same proton number but different nucleon number.
(*Isotopes are atoms of an element with the same number of protons but different numbers of neutrons.*)

10. Valence electrons

-- Valence electrons are the electrons in the outermost shell of an atom.
(*Valence electrons are the electrons in the shell which is furthest from the nucleus of an atom*)

11. Relative atomic mass

-- Relative atomic mass of an atom is the number of times the mass of one atom of an element which is heavier than 1/12 of the mass of a carbon-12 atom.

12. Avogadro constant

-- Avogadro constant is the number of particles in one mole of a substance.

13. Molar volume

-- Molar volume of a gas is the volume of one mole of the gas.

14. Chemical formulae

-- Chemical formula is a representation of a chemical substance using letters for atoms and subscript numbers to show the numbers of each type of atoms that are present in the substance.

15. Empirical formula

-- Empirical formula of a compound is the chemical formula that shows the simplest whole number ratio of atoms of each element present in the compound.

16. Molecular formula

-- Molecular formula of a compound is the chemical formula that shows the actual number of atoms of each element that are present in one molecule of the compound.

17. Electropositivity

-- Electropositivity of an element is a measurement of the ability of an atom to donate electrons and form a positive ion.

18. Electronegativity

-- Electronegativity is a measurement of the strength of an atom to attract electrons towards its nucleus and form a negative ion.

19. Amphoteric oxide

-- Amphoteric oxide is an oxide which can react with both acids and bases to form salts and water.

20. Ionic bond

-- Ionic bond is a chemical bond that is formed as a result of strong electrostatic forces of attraction between oppositely charged ions which are formed through the transfer of electrons from metal elements to atoms of non-metals elements.

21. Covalent bond

-- Covalent bond is a chemical bond formed through the sharing of electrons between two non-metal atoms.

22. Electrolytes

-- Electrolytes are substances that can conduct electricity either in molten state or in aqueous solution, and undergo chemical changes.

23. Non-electrolytes

-- Electrolytes are substances that cannot conduct electricity either in molten state or in aqueous solution.

24. Conductors

-- Conductors are substances that can conduct electricity in solid or molten state but are not chemically changed.

25. Inert electrodes

-- Inert electrodes are electrodes that do not take part in chemical reactions during electrolysis.

26. Anode

-- Anode is the electrode where the process of donation of electrons takes place (oxidation process).

27. Cathode

-- Anode is the electrode where the process of acceptance of electrons takes place (reduction process).

28. Electroplating

-- Electroplating is a process carried out to coat the surface area of metal objects with a thin and even layer of another metal.

29. Electrochemical Series

-- Electrochemical series is an arrangement of metals based on the tendency of each metal atom to donate electrons.

30. Acid

-- Acid is a chemical substance which ionizes in water to produce hydrogen ion, H^+.

31. Strong acid

-- A strong acid is an acid which ionizes completely in water to produce **high** concentration of hydrogen ions.

32. Weak acid

-- A weak acid is an acid which ionizes partially in water to produce **low** concentration of hydrogen ions.

33. Monoprotic acid

-- Monoprotic acid is an acid which produces one hydrogen ion when one molecule of the acid ionizes in water.

34. Diprotic acid

-- Diprotic acid is an acid which produces two hydrogen ions when one molecule of the acid ionizes in water

35. Triprotic acid

-- Triprotic acid is an acid which produce a maximum of three hydrogen ions when one molecule of the acid ionizes in water

36. Base

-- A base is a chemical substance that can neutralized an acid to produce a salt and water.

37. Alkali

-- Alkali is base that dissolves in water to produce hydroxide ions, OH^-.

38. Strong alkali

-- A strong alkali is an alkali which ionizes completely in water to produce high concentration of hydroxide ions.

39. Weak alkali

-- A weak alkali is an alkali which ionizes partially in water to produce low concentration of hydroxide ions.

40. pH scale

-- The pH scale is a scale of numbers, ranging from 0 to 14, used to measure the acidity or alkalinity of an aqueous solution based on the concentration of hydrogen ion, H^+ in the aqueous solution.

41. Concentration

-- Concentration of a solution is a measurement which shows the quantity of a dissolved solute in 1 dm^3 of the solution.

42. Molarity

-- Molarity is the unit of concentration that shows the number of moles of a solute dissolved in 1 dm^3 of solution.

43. Standard solution

-- A standard solution is a solution in which its concentration is accurately known.

44. Neutralisation

-- Neutralisation is a reaction between an acid with a base or alkali to produce a salt and water.

45. Titration

-- Titration is a laboratory technique in which one solution is used to analyse another solution.

46. Acid-base titration

-- Acid-base titration is a quantitative analysis used to determine the volume of an acid required to exactly neutralise a fixed or known volume of an alkali, and vice versa.

47. End-point

-- The *end-point* is the point at which the amount of acid added exactly neutralises all the alkali, that is the point when all OH^- ions combine with H^+ ions to form water.

48. Salt

-- A salt is an ionic compound that is formed when the hydrogen ion, H^+, from an acid is replaced by a metal ion or an ammonium ion, NH_4^+.

49. Soluble salts

-- Soluble salts are salts that can dissolve in water at room temperature.

50. Insoluble salts

-- Insoluble salts are salts that cannot dissolve in water at room temperature

51. Recrystallisation

-- Recrystallisation is the method used to purify soluble salt.

52. Double decomposition reaction

-- Double decomposition is the reaction when two aqueous solutions are mixed, the ions from two different salts interchange to form an insoluble and a soluble salt.

53. Alloy

-- An alloy is a mixture of two or more elements with a certain fixed composition in which the major component is a metal.

54. Polymers

-- Polymers are long-chain molecules (large molecules) made up of many identical repeating sub-units called monomers which are joined together by covalent bonds.

55. Monomers

-- Monomers are small molecules that combine to form polymers.

56. Composite materials

-- A composite materials is a structural material that is formed by combining two or more different substances such as metal, alloys, glass, ceramics and polymers. The resulting material has properties that are superior than those of the original components.

Form 5

1. Rate of reaction

-- Rate or reaction is the speed at which reactants are converted into products in a chemical reaction.

2. Catalyst

-- A catalyst is a substance which alters the rate of a chemical reaction while it remains chemically unchanged at the end of the reaction.

3. Positive catalyst

-- *A positive catalyst* is a substance that increases the rate of a reaction.

4. Negative catalyst

-- *A negative catalyst* is a substance that decreases (or lower) the rate of a chemical reaction.

5. Activation energy

-- The activation energy is the minimum energy that the reactant particles must possess at the time of collision in order for a chemical reaction to take place.

6. Effective collision

-- Effective collision is the collisions which achieved an equal to, or more than the minimum amount of activation energy, and with the correct orientation that are successful in producing a chemical reaction.

7. Ineffective collision

-- Ineffective collision is the collision when the particles collide with energy less than the activation energy needed for reaction or with the wrong orientation, they simply bounce apart without reacting.

8. Carbon compounds

-- Carbon compounds are compounds that contains carbon as one of their constituent elements.

9. Hydrocarbons

-- Hydrocarbons are organic compounds that contain the elements of carbon and hydrogen only.

10. Homologous series

-- Homologous series are families of organic compounds that have the same chemical properties.

11. Saturated hydrocarbons

-- Saturated hydrocarbons are hydrocarbons that have only single covalent bonds between all the carbon atoms in the molecules.

12. Unsaturated hydrocarbons

-- Unsaturated hydrocarbons are hydrocarbons that have at least one carbon-carbon double or triple bond in the molecules.

13. Isomerism

-- Isomerism is the *existence* of two or more compounds that have the same molecular formula but different structural formulae.

14. Reflux

-- Reflux is method of retaining a volatile liquid during heating.

15. Vulcanization

-- Vulcanization is the process of hardening natural rubber by heating it with sulphur or sulphur compounds.

16. Redox Reactions

-- Redox reactions are chemical reactions involving oxidation and reduction occurring simultaneously.

17. Exothermic Reaction

-- An exothermic reaction is a chemical reaction that gives out heat to the surroundings.

18. Endothermic Reaction

-- An endothermic reaction is a chemical reaction that absorbs heat from the surroundings

19. Bond energies

-- B*ond energy* is the energy required to break one mole of covalent bonds.

20. Heat of reaction

-- The heat of reaction is the heat energy absorbed or released when the number of moles of reactant, as shown in the chemical equation, react to form the products.

21. Specific heat capacity

-- Specific heat capacity of a solution is the heat energy required to raise the temperature of 1.0g of the solution by 1.0^0C.

22. Heat of Precipitation

-- The heat of precipitation is the heat change when one mole of a precipitate is formed from their ions in aqueous solution.

23. Heat of displacement

-- The heat of displacement is the heat change when one mole of a metal is displaced from its salt solution by a more electropositive metal.

24.Heat of Neutralization

-- The heat of neutralization is the heat change when one mole of water is formed from the reaction between an acid and an alkali.

(or)

-- The heat of neutralization is the heat change when one mole of hydrogen ions is neutralized by one mole of hydroxide ions to form one mole of water.

25. Heat of Combustion

--The heat of combustion is the heat change when *one mole of a substance* is *completely burnt* in excess oxygen under standard conditions.

26. Saponification

-- *Saponification is* the alkaline hydrolysis process of ester (oil or fat) in soap-making.

27. Hard water

-- Hard water is the water that contains magnesium ions or calcium ions.

28. Food additive

-- Food additive is a natural or synthetic substance which is added to food to prevent spoilage or to improve its appearance, taste or texture.

29. Medicine

-- A medicine is a substance used to prevent or cure diseases or to relieve pain and suffering due to illnesses.

30. Traditional medicine

-- Traditional medicines are medicines derived from natural sources such as plants and animals without being processed chemically.

31. Modern medicine

-- Modern medicines are made by scientists in laboratories and on substances found in nature. The active ingredients in the substances are identified, extracted and purified.

32. Analgesics (painkillers)

-- Analgesics are medicines used to relieve pain without causing numbness or affecting consciousness.

33. Antibiotic

-- Antibiotics are medicines used to treat infections caused by bacteria as they can kill or slow down the growth of bacteria.

34. Psychotherapeutic medicines

-- Psychotherapeutic medicines are used to alter abnormal thinking, feelings or behaviours.

35. Drug abuse

-- Taking drugs excessively and without a doctor's prescription is called drug abuse.