

Things to remember (mug up)

1. Subatomic particles $\rightarrow$ Protons, Neutrons
2. Enthalpy change of formation - Energy change when one mole of a compound is formed from its elements in standard state
3. How are nitrogen oxides produced naturally - Lightning
4. Homogeneous catalyst - same state as of reactants
5. Heterogeneous Catalyst - different state as of reactants.
6. Uses of $\text{NH}_4\text{NO}_3 \rightarrow$ acts as a Fertilizer, neutralises acidic soil.
7. Homolytic fission - when $\text{Cl}-\text{Cl}$ bond breaks and each of them gets one electron
8. Heterolytic fission - when $\text{H}-\text{Cl}$ bond breaks and Cl gets both the electrons.
9. relative atomic mass - avg mass of isotopes, relative to $\frac{1}{12}$ mass of ^{12}C .
10. Nitrogen monoxide reacts with oxygen and water (moist air) causing acid rain, photochemical smog, destroys ozone layer.
11. Presence of an enzyme does not change enthalpy
12. Enthalpy change of combustion - Energy change when one mole of element combusts in air.
13. The test for halogens, add AgNO_3 the precipitate in this reaction is AgX where X is a halogen. Ex. AgBr gives cream ppt.
14. CaCO_3 and Ca(OH)_2 neutralise acidic soil.
15. The number of electrons in a molecule of CO is $\rightarrow 14, (6+8)$
16. If a molecule is polar then it is more reactive.
17. Conditions for ideal gas behaviour - High temperature, Low pressure
18. Carbon monoxide is harmful to health.
19. MgO does not react if heated.
20. $\text{Mg(NO}_3)_2$ thermal decomposition $\rightarrow \text{MgO} + \text{NO}_2 + \text{N}_2$ $\nearrow$ produces brown fumes
21. Structure of a crystalline solid $\rightarrow$ giant and strong FOF between oppositely charged particles.

low pressure
high temp
conditions.
~~low temp~~

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22. Behaviour of particles in an ideal gas

- Negligible size of particles
- Negligible force of attraction between particles
- collisions are elastic

23. Why does any thing not behave as an ideal gas

- all points opposite of above
- FOA becomes larger
- size of particles no more negligible

24. Rate of reaction is change in amount of substance with time.

25. Cl-Cl bond is stronger ~~and longer~~ compared to Br-Br. Time taken for any reaction increases if Cl-Cl is used.

26. Stereoisomerism is same structural formula with different arrangement.

27. Vapour pressure

- The compound gas is in equilibrium with the liquid
- The gas exerts pressure on the walls of the container

28. methanol is added to a flask and then sealed

Explain why some of the liquid becomes vapour

- particles at the surface have enough energy to overcome attractive forces and become vapour.

29. Vapour pressure of water is lower than vapour pressure of methanol at rtp

- water molecules are held with stronger hydrogen bonding so it takes more energy to break the hydrogen bonding
- ∴ Fewer H_2O molecules are able to become gas and exert pressure

30. physical property of ceramic materials

→ high melting point

→ strong

→ non-conductors of electricity.

31. reducing agents → LiAlH_4 and NaBH_4

Strong

weak → can reduce ketone

32. Hydration → addition

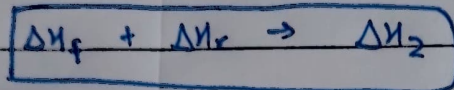
→ cannot reduce COOH

Hydrolysis → substitution

34. Isotopes have same chemical properties because number of electrons are same. They have different physical properties because they have different masses.

35. if NH_3 is added solid dissolves.

36. Hess's law



37. when a mixture of 2 organic compounds is formed it is because of sp^2 hybridisation.

The compound will be planar; because different ~~stereo~~ Stereoisomerism takes place.

38. Chlorine kills bacteria.

39. photochemical smog causing $\rightarrow$ Peroxyacetyl nitrate / PAN



$\rightarrow$ this is esterification.

$\rightarrow$ and the reactant is alcohol with one carbon atom as there is only one carbon after COO

$\rightarrow$ reactant $\rightarrow \text{CH}_3\text{OH}$, methanol

41. Dehydrating agents $\rightarrow$ conc. H_2SO_4 and Al_2O_3

$\hookrightarrow$ used to dehydrate alcohols.

42. conjugate base of $\text{H}_2\text{S} \rightarrow \text{HS}^-$

43. 2 sp hybridised orbitals forming σ bond.

