



Chemistry

- Choose the correct answer:
 - Which of the following equilibria will be unaffected by the change in pressure
 - $\text{N}_2 + 3\text{H}_2 \rightleftharpoons 2\text{NH}_3$
 - $\text{PCl}_5 \rightleftharpoons \text{PCl}_3 + \text{Cl}_2$
 - $\text{H}_2 + \text{I}_2 \rightleftharpoons 2\text{HI}$
 - $\text{N}_2\text{O}_4 \rightleftharpoons 2\text{NO}_2$
 - The oxidation number of manganese in MnSO_4 is ...
 - Among the following reactions which one of these redox reaction
 - $\text{AgNO}_3 + \text{NaCl} \rightarrow \text{AgCl}_2 + \text{NaNO}_3$
 - $\text{CaO} + 2\text{HCl} \rightarrow \text{CaCl}_2 + \text{H}_2\text{O}$
 - $2\text{H}_3\text{CrO}_2 \rightarrow \text{H}_9\text{Cr}_2\text{O}_3 + \text{H}_2\text{O}$
 - $\text{SnCl}_2 + \text{Br}_2 \rightarrow \text{SnCl}_2\text{Br}_2$
 - The IUPAC name of CH_3CHO is ...
 - Which one of the following is not a transition metal
 - Zinc
 - Tungstan
 - Copper
 - vanadium
- Fill in the following blanks with the correct answer:
 - The most important ore of Aluminium is ...
 - Gamma rays are ... radiations.
 - The most electronegative element is ...
 - The number of molecules present in one of any substance is
 - The product obtained by the reaction of formaldehyde with ammonia is ...
- State whether the following statement is TRUE or FALSE?
 - The rate of chemical reaction is constant at a given temperature.
 - Isotopes have same atomic number.
 - Formic acid is a reducing agent.
 - The ionization potential potassium is greater than that of sodium.
 - Sulphur exhibits variable valence.
- Match the following

Radioactivity	Henry Bacqueral
Electron	Calcium
Hydrogen	Madame Curie
Fluorspar	Negative charge
Addition-reactions	Covalent compound
	Diatomic
	Ethylene



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5. (a) A certain amount of an ideal gas occupies a volume of 1.0 m^3 at a given temperature and pressure. What would be its volume after reducing its pressure to half the initial value and rising the temperature to twice the initial value?
(b) Balance the following equations using ion electron method.
(i) $\text{Zn} + \text{AgNO}_3 \rightarrow \text{Zn}(\text{NO}_3)_2 + \text{Ag}$
(ii) $\text{Na}_2\text{S}_2\text{O}_3 + \text{I}_2 \rightarrow \text{Na}_2\text{S}_4\text{O}_6 + \text{NaI}$
6. (a) The heat of formation of CO and CO_2 are -110.5 and $-393.3 \text{ KJ mol}^{-1}$ respectively. Calculate the enthalpy of the following reaction:
 $2\text{CO}_2(\text{g}) + \text{O}_2(\text{g}) \rightarrow 2\text{CO}(\text{g})$
(b) What is a Lewis acid? What is Lewis base? Give one example for each.
(c) Define electron affinity.
7. (a) The radioactivity of an element decreases to half its initial value in 5 hours. Still how long it will take for the activity to become $1/8^{\text{th}}$ of the initial activity?
(b) Give any four characteristics of block elements
8. (a) Outline the extraction of copper from copper pyrites.
(b) How does Phosphorus react with (i) NaOH (ii) Chlorine . Give reasons.
9. (a) Give one method of preparation of acetylene ?
(b) How will you prepare the following from acetylene?
(i) Acetaldehyde (ii) Acrylonitrile (iii) Benzene
(c) Mention two uses of acetylene.
10. (a) Give one test to distinguish Ethyl alcohol from Methyl alcohol.
(b) How will you prepare Aniline from Benzene?
(c) Give the structure and name of hydrocarbon C_5H_{12} which has primary secondary and tertiary carbons?