

**Kerala State Board
Class X Chemistry
Sample Paper – 1 Solution**

1. The periodic trend followed in the electronegativity of elements in the periodic table is as follows:
 - i. Electronegativity increases from left to right in a period because the tendency to lose electrons decreases.
 - ii. Electronegativity decreases while going down a group because the tendency to lose electrons increases.
2. 2f is not possible since second shell ($n=2$) can have l values = 0 to $n-1$, so, there can only be s and p sub-shells and d and f sub-shells are not included.
3. Feasibility of a reaction depends upon the reactivity of the metals.
 - (a) Copper is less reactive than sodium so, this reaction is not possible.
 - (b) Zinc is more reactive than iron and so, it displaces it from iron sulphate forming zinc sulphate.
 - (c) Iron is more reactive than copper and hence, displaces it from copper sulphate to form iron sulphate.
 - (d) Copper is more reactive than silver, so, a displacement reaction will occur.
 - (e) Zinc is more reactive than copper, so, zinc displaces copper and forms zinc sulphate.
4.
 - (a) If the concentration of hydrogen is increased, the equilibrium will shift in the forward direction.
 - (b) When pressure decreases, the system tries to maintain it and will shift in the direction in which pressure is increased, so, a backward reaction is favoured.
 - (c) If the temperature is increased, the reaction will shift in the direction of endothermic reaction i.e. backward reaction is favoured.
5.
 - (a) 2-methylhex-3-ene
 - (b) Butanoic acid
 - (c) 3-hexanol or hexan-3-ol

6.

- (a) White
- (b) Exothermic
- (c) Vanadium pentaoxide

7.

- (a) Power alcohol
- (b) Detergents
- (c) Denatured spirit
- (d) Fermentation

8.

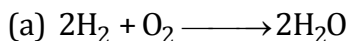
A	B
1. Analgesic	Relieve pain
2. Thermoplastic	Nylon
3. Gypsum	Cement
4. Flint glass	Lenses
5. Antipyretic	Lower body temperature

9. Charles' law states that assuming that pressure remains constant, the volume and the absolute temperature of a certain quantity of a gas are directly proportional to each other.

$$V \propto T \text{ (P, m are constant)}$$

$$\text{or } \frac{V}{T} = k(\text{constant})$$

10.



- (b) Since for every single oxygen molecule, 2 hydrogen molecules are required.

Therefore, the number of O_2 molecules that can react with eight H_2 molecules = 4

11.

i. Avogadro's law

ii.



$$\begin{aligned}\text{Number of moles} &= \frac{\text{Volume at STP}}{22.4} \\ &= \frac{22.4}{22.4} = 1\end{aligned}$$



$$\text{Number of moles} = \frac{11.2}{22.4} = 0.5$$

Molecular mass of $SO_2 = 64$

Mass of 22.4 litre $SO_2 = 64$ g

$$\text{Mass of 11.2 litre } SO_2 = \frac{64 \times 11.2}{22.4} = 32 \text{ g}$$

12. C_3H_8 and C_6H_{14} are alkanes. So they do not take part in addition reaction.

13. Soda glass is used for making window panes, bulbs etc. The raw materials used for producing soda glass are:

- (a) Sand - SiO_2 (Silica)
- (b) Soda ash - Na_2CO_3 (Sodium carbonate)
- (c) Lime stone - $CaCO_3$ (Calcium carbonate)