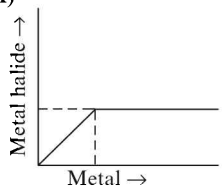
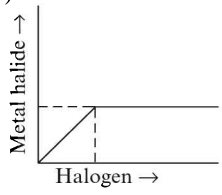
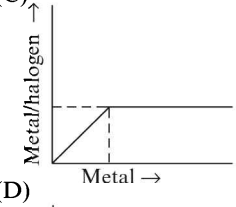
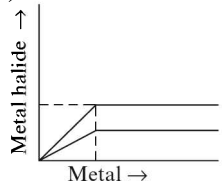
**9.** Match the following

| Column I Masses of different components | Column II Observation |
|---|---|
| (A)   | (P) Metal is the limiting reagent |
| (B)   | (Q) Halogen is the limiting reagent |
| (C)   | (R) Metal and halogen are in stoichiometric amounts |
| (D)   | (S) Metal is exhibiting a particular valency in the chloride formation. |
| | (T) Metal is exhibiting variable valency in the chloride formation |

**10.** Match the following

| Column I | Column II |
|---|---|
| (A) 200 ml of a mixture of 50% $H_2$, 40% $CH_4$ and 10% $CO_2$ would evolve. The volume of $CO_2$ after combustion | (P) 10 ml |
| (B) 100 ml of acetylene ($C_2H_2$) required oxygen for complete combustion | (Q) 45 ml |
| (C) 10 ml of hydrogen sulphide ($H_2S$) requires chlorine for complete decomposition of NTP | (R) 250 ml |
| (D) When a mixture of 300 ml of CO and 30 ml of $O_2$ was exploded, the volume of gases produced due to explosion | (S) 100 ml |

**11.** Match the following

| Section I (Gaseous Organic compounds) | Section II (Volume of $O_2$ needed for complete combustion per volume of compound) |
|---|---|
| (A) $C_xH_{2x+2}$ | (P) $\frac{3x+1}{2}$ |
| (B) $C_xH_{2x+2}O$ | (Q) $\frac{3x}{2}$ |
| (C) $C_xH_{2x+3}N$ | (R) $\frac{3(2x+1)}{4}$ |
| (D) $C_xH_{2x+2}S$ | (S) $\frac{3(x+1)}{2}$ |

**12.** Column I consists of some decomposition reactions and Column II consists of some absorbent for the gases evolved in the reactions given in Column I. Match the gases evolved in Column I with the proper absorbent in Column II.

| Column I | Column II |
|---|---|
| (A) $Li_2CO_3 \xrightarrow{\Delta} Li_2O + CO_2\uparrow$ | (P) CaO |
| (B) $CaC_2O_4 \xrightarrow{\Delta} CaO + CO\uparrow + CO_2\uparrow$ | (Q) Ammoniacal CuCl |
| (C) $HCOONa \xrightarrow{\Delta} NaOH(s) + CO\uparrow$ | (R) $P_4O_{10}$ |
| (D) $2KHSO_3 \xrightarrow{\Delta} K_2SO_4 + H_2O\uparrow + SO_2\uparrow$ | (S) NaOH Solution |