4. Match the following

Column I	Column II
(A) 2 mol octane required O_2 for completely combustion	(P) 1100 g
(B) 300 g carbon combines with 800 g of oxygen to produce CO_2	(Q) 11.2 L at 0°C and 1 atom
(C) 1 g-atom of Nitrogen	(R) 25 mol
(D) 124 g of NO_3^- ion	(S) 48.16×10^{23} atoms
	(T) 800 g

5. When 1 mole of carbon reacts with 1 mole of oxygen producing 1 mole of CO_2, 100 kcal heat is released and when 1 mole of carbon reacts with 0.5 mole of oxygen producing 1 mole of CO, 25 kcal heat is released. Column – I represents some amounts of carbon and oxygen which may react to form CO or CO_2 or both, in such a way that none of the reactant remain left, and Column – II represents the heat released. Match the amounts with the corresponding heat released.

Column I	Column II
(A) 36 g C and 80 g O_2	(P) 125 kcal
(B) 12 g C and 24 g O_2	(Q) 225 kcal
(C) 24 g C and 48 g O_2	(R) 150 kcal
(D) 36 g C and 64 g O_2	(S) 62.5 kcal

6. Match the following

Column I	Column II
(A) Amount of O_2 for complete combustion of 2 mole octane	(P) 1100 g
(B) Amount of CO_2 produced when 300 g carbon combines with 800 g of oxygen	(Q) 560 L of 273 K and 1 atm
(C) Amount of NaOH needed for complete neutralization of 1225 g H_2SO_4	(R) 25 mole
(D) Amount of N_2H_4 formed from 50 mole H_2	(S) 3.01×10^{25} atoms
	(T) 800 g

7. Match the following

Column I	Column II
(A) N_2 (3.5 g) + H_2 (1.0 g) → NH_3	(P) First reactant is the limiting reagent
(B) H_2 (1.0 g) + O_2 (4.0 g) → H_2O	(Q) Second reactant is the limiting reagent
(C) S (4.0 g) + O_2 (6.0 g) → SO_3	(R) Stoichiometric amounts of reactants
(D) Fe (11.2 g) + O_2 (3.2 g) → Fe_2O_3	(S) Mass of reactants > mass of product formed

8. Match the following

Column I Compound	Column II Relative amounts of products, on complete combustion
(A) CH_4	(P) mole of CO_2 < mole of H_2O
(B) C_2H_4	(Q) mole of CO_2 = mole of H_2O
(C) C_2H_2	(R) mole of CO_2 > mole of H_2O
(D) C_3H_8	(S) mass of CO_2 > mass of H_2O