

19. When hydrocarbons (alkanes, alkenes or alkynes) are burnt completely in excess of oxygen, then
- for the same number of carbon atoms, more oxygen is consumed for alkanes.
 - for the same number of hydrogen atoms, more oxygen is consumed for alkynes.
 - for the same number of carbon atoms, more water is formed from alkynes.
 - for the same number of hydrogen atoms, more CO_2 is formed from alkynes.
20. A quantity of 12 g of magnesium is burnt completely in air ($\text{O}_2 = 20\%$ and $\text{N}_2 = 80\%$, by volume). Which of the following is/are correct statement(s) regarding this combustion?
- A minimum of 36 g air is needed if all Mg is converted into MgO only.
 - A minimum of 40 g air is needed if all Mg is converted into MgO only.
 - A minimum of 4.67 g air is needed if all Mg is converted into Mg_3N_2 only.
 - If air is consumed completely, then the total mass of products formed is 17.14 g.
21. A mixture contains NaCl and unknown chloride, MCl. When 1 g of this mixture is dissolved in water and excess of AgNO_3 solution is added to it, 2.567 g of white precipitate is obtained. In another experiment, 1 g of the same original mixture is heated to 300°C . Some vapours come out which are absorbed in acidified AgNO_3 solution by which 1.341 g of white precipitate is formed. The molecular mass of unknown chloride is
- 53.4
 - 58.5
 - 44.5
 - 74.4
22. An amount of 0.15 moles of $\text{K}_2\text{Cr}_2\text{O}_7$ is required to oxidize a mixture of XO and X_2O_3 (total mass = 2.18 g) to form XO and Cr^{3+} . If 0.0187 moles of XO is formed, what is the atomic mass of X?
- 49.5
 - 99
 - 136.4
 - 56
23. A volume of 10 ml of a mixture of H_2 and O_2 is exploded. If the final volume becomes 1 ml, the composition of original mixture may be
- 7 ml H_2 , 3 ml O_2
 - 6 ml H_2 , 4 ml O_2
 - 5 ml H_2 , 5 ml O_2
 - 3 ml H_2 , 7 ml O_2
24. A definite volume of ammonia gas is passed through a series of electric sparks by which the volume becomes 90 ml. On washing with dilute orthophosphoric acid, the volume reduced to 84 ml. Which of the following statement(s) is/are correct regarding the original ammonia sample?
- Its original volume was 45 ml.
 - Its original volume was 48 ml.
 - 12.5% of the original ammonia has decomposed.
 - 87.5% of the original ammonia has decomposed.
25. To what extent must a given solution of concentration of 40 mg silver nitrate per ml be diluted to yield a solution of concentration of 16 mg silver nitrate per ml?
- each ml should be diluted to 2.5 ml
 - to each ml of solution, 1.5 ml of water should be added
 - to 2.5 ml of solution, 2 ml of water should be added
 - to 1.5 ml of solution, 1.5 ml of water should be added