

- The white ash is
(A) HgO (B) CaO (C) MgO (D) PbO
- Which of the following is the example of chemical combination?
(A) $\text{NH}_3 + \text{HCl} \rightarrow \text{NH}_4\text{Cl}$ (B) $2\text{Mg} + \text{O}_2 \rightarrow 2\text{MgO}$
(C) $\text{S} + \text{O}_2 \rightarrow \text{SO}_2$ (D) All
- Burning of carbon in air follows
(A) Chemical decomposition (B) Chemical displacement
(C) Chemical double decomposition (D) Chemical combination
- When a glass rod dipped in dilute hydrochloric acid is placed at the mouth of the test tube containing ammonia it gives
(A) Dazzling light (B) White dense fumes (C) Orange red vapors (D) None
- Which of these is an example of a decomposition reaction?
(A) $\text{CaCO}_3 + \text{H}_2\text{SO}_4 \rightarrow \text{CaSO}_4 + \text{CO}_2 + \text{H}_2\text{O}$ (B) $2\text{H}_2 + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$
(C) $\text{Zn} + \text{H}_2\text{SO}_4 \rightarrow \text{ZnSO}_4 + \text{H}_2$ (D) $2\text{KClO}_3 \rightarrow 2\text{KCl} + 3\text{O}_2$
- When CaCO_3 is heated the gas released is
(A) CO (B) CO_2 (C) CaO (D) O_2
- The colour of nitrogen dioxide gas is
(A) White (B) Yellow (C) Reddish brown (D) Blue
- The colour of PbO (lead oxide) is
(A) White (B) Pale yellow (C) Red (D) Blue
- Pick out the false statement
(A) Decomposition of a chemical compound leads to the formation of two new compounds
(B) Combination of two different elements is possible
(C) Combination of an element with a compound to form a new product is possible.
(D) Decomposition of single compound is not possible.
- Which of the following is an example of chemical decomposition?
(A) $\text{CuCO}_3 \rightarrow \text{CuO} + \text{CO}_2 \uparrow$ (B) $2\text{KNO}_3 \rightarrow 2\text{KNO}_2 + \text{O}_2 \uparrow$
(C) $2\text{H}_2\text{O}_2 \rightarrow 2\text{H}_2\text{O} + \text{O}_2 \uparrow$ (D) All of the above
- $2\text{KI} + \text{Cl}_2 \rightarrow 2\text{KCl} + \text{I}_2$ is an example of
(A) Chemical displacement (B) Chemical decomposition
(C) Chemical double decomposition (D) Precipitation reaction
- The colour of the copper sulphate solution is
(A) White (B) Red (C) Blue (D) Yellow
- Which of the following is an example of chemical displacement?
(A) $\text{Zn} + 2\text{HCl} \rightarrow \text{ZnCl}_2 + \text{H}_2 \uparrow$ (B) $\text{Zn} + \text{CuSO}_4 \rightarrow \text{ZnSO}_4 + \text{Cu}$
(C) $\text{Zn} + \text{H}_2\text{SO}_4 \rightarrow \text{ZnSO}_4 + \text{H}_2 \uparrow$ (D) All
- When dilute sulphuric acid (H_2SO_4) reacts with ferrous sulphide (FeS), hydrogen sulphide (H_2S) gas is produced; this is an example of
(A) Chemical decomposition (B) chemical double decomposition
(C) Chemical displacement (D) chemical combination
- In the manufacture of sulphuric acid (H_2SO_4) the sulphur trioxide (SO_3) gas is dissolved in water. The chemical change represents
(A) Decomposition (B) Double decomposition
(C) Combination (D) Double decomposition.

16. Oxidation state of nitrogen is not an integer in
 (A) Hydroxyl amine (NH₂OH) (B) Ammonia (NH₃)
 (C) Hydrazine (N₂H₄) (D) Hydrazoic acid (N₃H)
17. Oxygen can show positive oxidation state in its compounds with
 (A) Fluorine (B) Nitrogen (C) Hydrogen (D) None
18. The oxidation state of oxygen is maximum in
 (A) Bleaching powder (CaOCl₂) (B) Oxygen difluoride (OF₂)
 (C) Dioxygen difluoride (O₂F₂) (D) Hydrogen peroxide (H₂O₂)
19. The oxidation number of chlorine is maximum in
 (A) HOCl (B) Cl₂O₆ (C) KClO₄ (D) NaClO₃
20. Chlorine has two different oxidation numbers in
 (A) Cl₂O₆ (B) Cl₂O (C) CaOCl₂ (D) Cl₂O₇
21. The element which has only one oxidation state in its compounds is
 (A) Hydrogen (B) Oxygen (C) Nitrogen (D) Fluorine
22. The oxidation number of manganese in KMnO₄ is
 (A) +3 (B) +5 (C) +7 (D) +9
23. In ICl₃ oxidation numbers of iodine and chloride respectively are:
 (A) 0 & 0 (B) +3 & -1 (C) -1 & +3 (D) -3 & +1
24. The oxidation number of Oxygen in KO₂ is
 (A) -2 (B) -1 (C) -1/2 (D) -1/3
25. The oxidation numbers of nitrogen in NH₄NO₃ are
 (A) -3 & +5 (B) +3 & +5 (C) +5 (D) +3
26. In the reaction $x\text{CuO} + \text{NH}_3 \rightarrow x\text{Cu} + \text{N}_2 + \text{H}_2\text{O}$ the "x" value when balanced is
 (A) 2 (B) 3 (C) 4 (D) 5
27. Which of these is not a redox reaction?
 (A) $\text{CaCO}_3 \rightarrow \text{CaO} + \text{CO}_2$ (B) $2\text{H}_2 + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$
 (C) $\text{Na} + \text{H}_2\text{O} \rightarrow \text{NaOH} + \frac{1}{2} \text{H}_2$ (D) $\text{MnCl}_3 \rightarrow \text{MnCl}_2 + \frac{1}{2} \text{Cl}_2$
28. Balance the following equation $x\text{Al}_{(s)} + y\text{MnO}_{2(s)} \longrightarrow p\text{Al}_2\text{O}_{3(s)} + q\text{Mn}_{(s)}$ and pick the correct value for (x + y) – (p + q).
 (A) 4 (B) 2 (C) $\frac{8}{3}$ (D) 3
29. Which of these is not a redox reaction?
 (A) $\text{CaCO}_3 \rightarrow \text{CaO} + \text{CO}_2$ (B) $2\text{H}_2 + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$
 (C) $\text{Na} + \text{H}_2\text{O} \rightarrow \text{NaOH} + \frac{1}{2}\text{H}_2$ (D) $\text{MnCl}_3 \rightarrow \text{MnCl}_2 + \frac{1}{2}\text{Cl}_2$
30. Balance the following equation by oxidation number method: $\text{Cr}_{(s)} + \text{Pb}(\text{NO}_3)_{2(aq)} \rightarrow \text{Cr}(\text{NO}_3)_{3(aq)} + \text{Pb}_{(s)}$
 (A) $2\text{Cr}_{(s)} + 3\text{Pb}(\text{NO}_3)_{2(aq)} \rightarrow 2\text{Cr}(\text{NO}_3)_{3(aq)} + 3\text{Pb}_{(s)}$
 (B) $2\text{Cr}_{(s)} + 2\text{Pb}(\text{NO}_3)_{2(aq)} \rightarrow 4\text{Cr}(\text{NO}_3)_{3(aq)} + 3\text{Pb}_{(s)}$
 (C) $3\text{Cr}_{(s)} + 2\text{Pb}(\text{NO}_3)_{2(aq)} \rightarrow 3\text{Cr}(\text{NO}_3)_{3(aq)} + 4\text{Pb}_{(s)}$
 (D) $2\text{Cr}_{(s)} + 3\text{Pb}(\text{NO}_3)_{2(aq)} \rightarrow 3\text{Cr}(\text{NO}_3)_{3(aq)} + 2\text{Pb}_{(s)}$