Oxidation and Reduction PYQs (2014-2024)

25. Which one of the following nitrogen oxides has the highest oxidation state of nitrogen?

(a) NO

(b) NO_2

(c) N_2O

(d) N_2O_5

Which one of the following statements is correct?

(a) The oxidation number for hydrogen is always zero.

(b) The oxidation number for hydrogen is always +1.

(c) The oxidation number for hydrogen is always −1.

(d) Hydrogen can have more than one oxidation number.

3. Reaction between which of the following two reactants will produce hydrogen gas?

(a) Magnesium and hydrochloric acid

(b) Copper and dilute nitric acid

(c) Calcium carbonate and hydrochloric acid

(d) Zinc and nitric acid

108. Which one of the following is ***not*** an example of an oxidation reaction ?

(a) The taste of butter changes if left for a longer period

(b) A white substance is formed when an aqueous solution of barium chloride is mixed with sodium sulphate solution

(c) A reddish-brown powder gets coated on articles made of iron

(d) Wine gets sour with time

34. Which one of the following is ***not*** an oxidation reaction?

(a) Rusting of iron

(b) Opening of soda bottle

(c) Rancidity

(d) Combustion

Which of the following statements with regard to heating of lead nitrate powder over a flame are correct?

1. Brown fumes of NO are released.
2. Colourless O_2 gas is released.
3. It is an example of oxidation reaction.
4. It is an example of thermal decomposition used for the production of NO_2 gas.

Select the correct answer using the code given below.

(a) 1 and 2

(b) 2, 3 and 4

(c) 1, 3 and 4

(d) 2 and 4 only

78. Which of the following catalytic systems is used for the reduction of unsaturated hydrocarbon to saturated hydrocarbon?

(a) Copper and H_2

(b) Iron and H_2

(c) Zinc and H_2

(d) Nickel and H_2

3. Which one of the following chemical reactions is ***not*** feasible?

(a) $Fe + CuSO_4 \rightarrow FeSO_4 + Cu$

(b) $Zn + CuSO_4 \rightarrow ZnSO_4 + Cu$

(c) $Cu + PbCl_2 \rightarrow CuCl_2 + Pb$

(d) $Mg + CuSO_4 \rightarrow MgSO_4 + Cu$

99. Which one of the following oxides shows both acidic and basic behaviour?

(a) Zinc oxide

(b) Copper oxide

(c) Magnesium oxide

(d) Calcium oxide


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