

The Chemical formula of Rust Chemistry Questions with Solutions

Q1. What is the chemical formula of rust?

- (a) $\text{Fe}_2\text{O}_3 \cdot x\text{H}_2\text{O}$
- (b) $\text{Fe}_3\text{O}_4 \cdot x\text{H}_2\text{O}$
- (c) Both (a) and (b)
- (d) None of the above

Answer: (a) $\text{Fe}_2\text{O}_3 \cdot x\text{H}_2\text{O}$

Q2. What is the colour of rust?

- (a) Reddish-brown
- (b) Greenish-yellow
- (c) Both (a) and (b)
- (d) None of the above

Answer: (a) Reddish-brown

Q3. What is the nature of rust?

- (a) Acidic
- (b) Basic
- (c) Both (a) and (b)
- (d) None of the above

Answer: (b) Basic

Explanation: Rust is a metal oxide. Hence, it is basic.

Q4. Rusting of iron is also known as _____.

- (a) Corrosion
- (b) Ferrisation
- (c) Both (a) and (b)
- (d) None of the above

Answer: (a) Corrosion

Q5. What is the chemical name of rust?

- (a) Ferrous oxide
- (b) Ferric oxide
- (c) Both (a) and (b)
- (d) None of the above

Answer: (b) Ferric oxide

Q6. What is rusting?

Answer: Rusting refers to the deposition of reddish brown material on iron articles. It damages or destroys the iron material.

Q7. What is galvanisation?

Answer: Galvanisation refers to the application of a protective zinc layer on iron or steel articles to prevent rusting.

Q8. What are the causes of rusting?

Answer: Rust is the deposition of reddish-brown ferric oxide on the surface of the iron. It is formed by the reaction of iron with oxygen and moisture. It erodes the iron object.

Q9. What are the various factors that affect rusting of iron?

Answer: Various factors that affect the rusting of iron are mentioned below.

1. Presence of moisture
2. Presence of acid
3. Presence of salt
4. Adulteration (Impure iron)

Q10. How does moisture content affect the rusting of iron?

Answer: Moisture content is directly related to rusting. The larger the moisture, the more would be rusting. The moisture reacts with electrons on the surface of the metal, leading to a redox reaction forming the ferric oxide.

Q11. What is the effect of pH on the rusting of iron?

Answer: pH is inversely proportional to rusting. The rusting process will slow if the pH of the environment surrounding the metal is significant.

Q12. How does the presence of salt affect the rusting of iron?

Answer: The rusting of iron speeds up in the presence of salt. Salt act as an electrolyte. It will allow the iron to lose its electrons rapidly.

Q13. What is the primary difference between rusting and corrosion?

Answer: The primary difference between rusting and corrosion is that rusting occurs on the surface of iron and its articles, but corrosion occurs on multiple surfaces such as metal, wood, marble, etc.

Q14. Name any three metals which do not corrode.

Answer: Platinum, gold and silver are the three metals which do not corrode.

Q15. Match the following.

Column A	Column B
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Corrosion of bridges	Redish-Brown
Rust	Acid Rain
Salt	Electrochemical phenomenon
Corrosion	Increase rusting

Answer:

Column A	Column B
Corrosion of bridges	Acid Rain
Rust	Redish-Brown
Salt	Increase rusting
Corrosion	Electrochemical phenomenon

Practise Questions on The Chemical formula of Rust

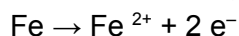
Q1. What is the effect of impurity on rusting of iron?

Answer: Rusting of iron typically increases on adulteration. Impure iron rust rapidly in comparison to pure iron.

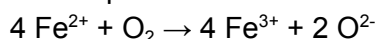
Q2. Write the reactions involved during the rusting of iron.

Answer: The reactions involved during the rusting of iron are mentioned below.

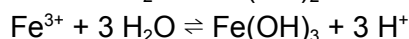
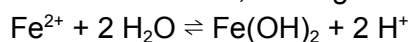
- Foremost, the iron gets oxidised to ferrous ions, as mentioned below.



- The oxidation state of iron is further increased to ferric (Fe^{3+}) by the oxygen atom when water is present.



- The following acid-base reactions occur between the ferrous and ferric cations and the water molecules, leading to the formation of rust.



Q3. Why is rusting of iron an unpleasant phenomenon?

Answer: Rusting iron is an unwanted phenomenon because it causes iron to become flaky and weak, degrading its strength, appearance and permeability. Rusted iron does not hold the desirable properties of iron. The rusting of iron can damage automobiles, railings, grills, and many other iron structures.

Q4. Name an alloy of iron that does not rust.

Answer: Stainless steel is an alloy of iron that does not rust.

Q5. What are the constituents of stainless steel?

Answer: Stainless steel is a corrosion-resistant alloy of iron, chromium, and nickel.

