

Answer Key Practice Question – Set 2

Subject – Chemistry

Class - X

Q. 1) Assertion: Turmeric can be used as an indicator by a visually impaired student.

Reason: Olfactory indicators are one which changes odour in acidic and basic solutions. (1)

Ans. (iv) Assertion (A) is incorrect, but Reason (R) is correct statement.

Q. 2) Give Reason: (2)

i) It is recommended that while diluting, the acid should be added to water and not water to the acid.

ii) An aqueous solution of an acid conduct electricity.

Ans. i) The process of dissolving an acid in water is highly exothermic. If water is added to concentrated acid the heat generated may cause the mixture to splash out and cause burns. The glass container may also break due to excessive local heating.

ii) Acids produce $H^+(aq)$ ion/ H_3O^+ ion in presence of water which is responsible for conduction of electricity in aqueous solution.

Q. 3) You have collected your garden soil and measured its pH which is found to be 5.2. For growing a certain plant you need an alkaline soil, which of the following you will add to get the desired quality of soil : a) ammonium sulphate b) slaked lime. Justify your answer. (2)

Ans. b) slaked lime

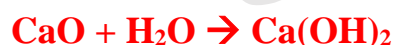
pH of the soil is 5.2 which indicates that the soil is acidic, so addition of slaked lime which is basic in nature to be added as it will first neutralize the acidic nature and then further addition will make the soil alkaline in nature.

Q. 4) Calcium oxide is a basic oxide but aluminium oxide is an amphoteric oxide – justify this statement with the help of balanced chemical equation(s). (2)

Ans. CaO reacts with acid to form salt and water.



Or, when it reacts with water it produces a base:



Al_2O_3 reacts with both acid and base to form salt and water.



Q. 5) Equal lengths of two magnesium ribbons are taken. One is introduced in test tube A which contains hydrochloric acid and the other is introduced in test tube B which contains acetic acid. In which test tube more vigorous fizzing will occur? Give reason for your answer. (2)

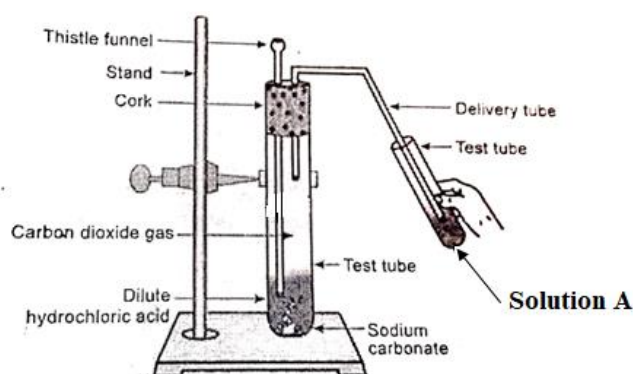
Ans. In test tube A more vigorous reaction (fizzing) will take place.

Hydrochloric acid being a strong acid produces a greater number of hydrogen ions in solution so on reaction with magnesium ribbon, it will produce more hydrogen gas whereas acetic acid is a weak acid, same concentration of this acid produces lesser number of hydrogen ions, and reaction is less vigorous in nature.

Q. 6) i) What will be the action of following substances on blue and red litmus paper?

Dry HCl gas, Moistened NH₃ gas.

ii) Following is the diagram for an activity to demonstrate reaction of dilute HCl with sodium carbonate. Solution A is used to identify the gas evolved in the reaction.



Write the balanced chemical equation for the reaction between solution 'A' and the gas evolved in the process and also mention the observation which helps to identify the gas. (3)

Ans. i)

Substance	Action on Blue Litmus	Action on Red Litmus
Dry HCl gas	No action	No action
Moistened NH ₃ gas	No action	Blue

ii) $\text{Ca(OH)}_2 + \text{CO}_2 \rightarrow \text{CaCO}_3 + \text{H}_2\text{O}$

On passing the gas through the solution(lime water), it turns milky.

Q. 7. i) Write the name given to base which is highly soluble in water.

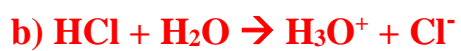
ii) Show the dissociation of the following in aqueous solution:

a) Magnesium hydroxide b) Hydrochloric acid

iii) Can we store pickle in a copper vessel? Justify your answer. (3)

Ans. i) Alkali. Sodium hydroxide/Potassium Hydroxide etc.

ii) a) $\text{Mg(OH)}_2 \xrightarrow{\text{H}_2\text{O}} \text{Mg}^{2+} + 2\text{OH}^-$



iii) No. Pickle contains acid. Copper reacts with the acid present in the pickle to form a substance which is unconsumable, may be harmful to health. That is why pickles are not stored in copper vessel.
