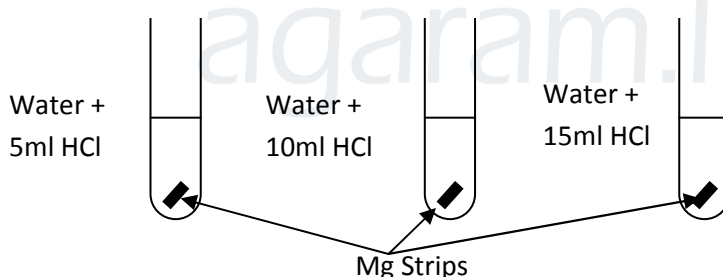


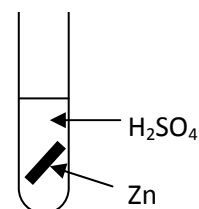


Rate of reactions

- An instance where the rate of reaction is decreased
 - Smoking of banana for ripening
 - Storing Jack in water
 - Dissolving sugar in hot water
 - Using salt powder instead of the salt crystals for cooking purpose
- The catalyst which is used in manufacturing margarine by hydrogenation of unsaturated fat is
 - Platinum
 - Iron
 - Nickel
 - Copper
- Which of the following is a bio catalysts?
 - Amylase
 - Hydrochloric acid
 - Manganese dioxide
 - Sand
- The most suitable method to increase the rate of reaction between A liquid and B liquid is
 - Decreasing the concentration of B
 - Cooling the solution
 - Increasing the concentration of A & B
 - Increasing the concentration of A
- Similar pieces of Mg strips are not into three test tubes at once. In which of the following shows the effect of rate of reaction.



- The effect of the surface area of the reactants
 - The effect of temperature
 - The effect of concentration of the reactants
 - None of above
- In this reaction
 - The boiling tube gets heated up and gas bubbles are evolved
 - The boiling tube gets cooled and gas bubbles are evolved
 - The boiling tube gets heated up and gas bubbles are not evolved
 - The boiling tube gets cooled and gas bubbles are not evolved

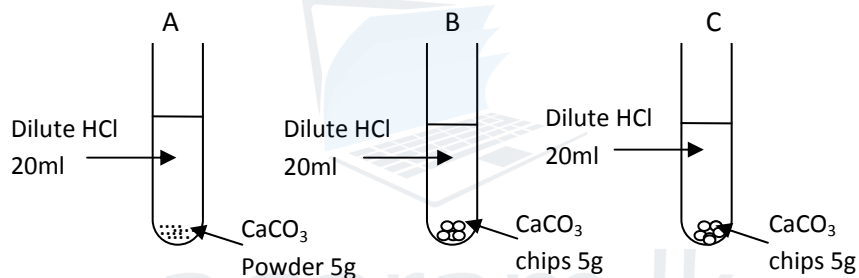


- These are three chemical reactions
 - Thermal decomposition of calcium carbonate
 - Thermal decomposition of potassium permanganate
 - Decomposition of hydrogen peroxide
 In which of the above instances Carbon dioxide is liberated as a product?
 - A
 - A & B
 - B & C
 - A & C

08. Extraction methods are given below for three metals named A, B, C
 A – Extract by shifting
 B – Extract by reducing the compounds
 C – Extract by electrolyzing the melted components
 Which is the ascending order of the reactivity of A, B, C metals
 1) A, B, C 2) B, C, A 3) C, B, A 4) A, C, B
09. Which reaction releases hydrogen at the highest rate?
 1) 10ml of HCl & 5g of Mg pieces
 2) 10ml of HCl & 5g of Fe pieces
 3) 10ml of HCl & 5g of Fe powder
 4) 10ml of HCl & 5g of Mg Powder
10. A step that can be taken to decrease the rate of reaction is,
 1) Adding inhibitors 2) Heating
 3) Breaking into little pieces 4) Increasing the concentration

Structured essay

01.A) Given below are 3 setups prepared to investigate the factors affecting the rate of reaction



- i) What are the setups use to investigate the effect of following factors on rate of reactions
 a) Temperature :.....
 b) Physical nature of the reactants :.....
- ii) a) Of the tubes B & C, in which does the reaction occur faster

 c) Explain the reason for your answer scientifically

- iii) Write the balanced chemical equation for the reaction occur in above setup

- iv) How do you identify the rate of reactions in above setup

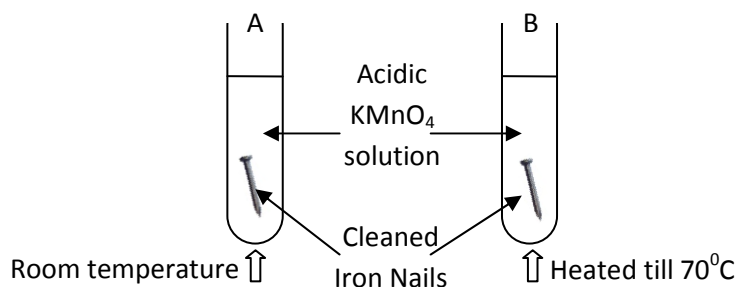
- v) It takes 2 minutes to dissolve all the calcium carbonate in C setup.
 a) Write an expression for the rate of reaction for the reaction occur in C setup

 b) What will be the time taken to disappear all the calcium carbonate in B setup

 c) What factors is kept constant for B & C setups

- iv) What are the other factors affecting the rate of reactions?

B. Given here is a set up arranged to show the effect of temperature on the rate of reaction



- Write an observation that can be seen after arranging the setup in few minutes
.....
- State two factors that should be kept in constant when the reactions take place in A and B test tubes.
.....
- When the temperature increases reaction rate increases. Explain scientifically
.....
.....

C. The total shows the result of experiments done at the laboratory compare the reactivity of metals X, Y & Z

Metal	With hot water	With steam	With dilute acid
X	Do not react	React	React
Y	Do not react	Do not react	Do not react
Z	React	React	React

- Arrange X, Y & Z in descending order of the their reactivity
.....
- Out of X, Y & Z which metal is below hydrogen in the activity series
.....
- Write three use of activity series
.....
.....
.....

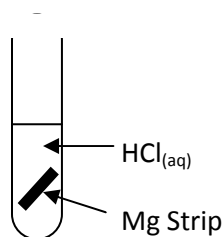
Essay

01.A)An observation made by a student about chemical reaction are shown below

- Rusting of an iron
- Ripening of fruits
- Little pieces of fire wood catch fire
- Melting ice cubes
- Adding piece of Sodium to water

- From the above mentioned reactions
 - State a reaction occurs slowly
 - State a reaction occurs fast
 - State one physical reaction
- What is called as the rate of reaction?
- Write two factors determine the rate of reactions?
- Write two observations for the chemical reaction of Sodium with water.
 - Write the balanced chemical equation

- B) In an experiment a magnesium strip of 2.4g was added to a test tube that contained Hydrochloric acid as follows



- i) Write the balanced chemical equation to express this reaction.
- ii) Write down a simple experiment that can be done to prove that the gas released in the reaction is hydrogen.
- iii) If it was needed to collect the hydrogen gas that is released, draw a diagram of an apparatus that can be used for it.
- iv) Write a method that can be measure the rate of reaction in the above experiment.
- v) If it takes 2 minutes to produce 5ml of hydrogen gas, find the rate of reaction of the set up.
- vi) At the beginning of the reaction, the rate of gas bubbles being released at fast while the rate was decreased and the reaction stopped completely after two minutes.
 - a) Explain the reason high rate of evolving bubbles at the beginning.
 - b) Mention another method that can increase the rate of this reaction.
- v) Represent your observation mentioned in (iv) above through a chart

Volume of gas

