BASICS OF COMPUTER SCIENCE

Subject Code: 4300005 **Date: 2025-04-01**

Subject Name: BASICS OF COMPUTER SCIENCE

Time Duration: 160.0 minutes **Total Marks: 64**

Instructions:

1. Stable Internet Required: Ensure a good connection.
2. Use Allowed Devices: Only a laptop/PC; no mobile phones or smartwatches.
3. No Switching Tabs: Changing windows may lead to disqualification.
4. Answer all questions within the given time limit. No extra time will be provided.
5. Submit the exam before the deadline, as responses will not be accepted afterward.

Q0. Formation of _____ gas by the action of dilute sulphuric acid on zinc.

Marks: 2

- (●) Hydrogen
- ( ) Oxygen
- ( ) Nitrogen
- ( ) None of these

Q1. Magnesium Ribbon burns with a dazzling white flame and changes ito a white powder Q1. (True/False)

Marks: 2

Answer: True

Q2. Magnesium oxide is formed due to reaction between

Marks: 2

Answer: Magnesium + Oxygen (2Mg + O■ → 2MgO)

Q3. What happens when milk is left at room temperature during summers?

Marks: 2

- ( ) It freezes
- (●) It curdles due to bacterial action
- ( ) It evaporates completly
- ( ) It turns into butter

Q4. What happens to an iron nail when left exposed to a humid atmosphere ?

Marks: 2

- ( ) It remains unchange
- ( ) It melts
- (●) It rusts due to oxidation
- ( ) It becomes shinier

Q0. What process occurs when grapes get fermanted ?

Marks: 2

- ○ Photosynthesis
- ○ Evaporation
- ◉ Chemical change leading to alcohol formation
- ○ Freezing

Q1. How do we know a chemical reaction has taken place ?

Marks: 2

- ○ There is always a change in color
- ○ The substance always turns into a gas
- ◉ The identity of the orignal substance changes
- ○ The state of matter remains the same

Q2. What is one common characteristics of all the given situations (milk curdling, iron Q2. rusting, food digestion, etc) ?

Marks: 2

- ○ They all involve a physical change
- ○ They all are reversible changes
- ◉ They involve the formation of new substances
- ○ All of Above

Q3. Which of the following is an example of a physical change ?

Marks: 2

- ○ Burning of Magnesium ribbon
- ○ Digestion of food
- ◉ Melting of ice
- ○ Fermentation of Grapes

Q4. The rusting of iron in a humid atmospher is due to:

Marks: 2

- ◉ Reaction with oxygen and water
- ○ Reaction with nitrogen in the air
- ○ High temperature exposure
- ○ The presence of Carbon Dioxide

Q5. When food gets cooked, what kind of change occurs ?

Marks: 2

- ○ Only a physical change
- ○ Only a chemical change
- ◉ Both Physical and Chemical Change
- ○ No changes occurs

Q0. What is the main reason for using sandpaper before burning magnesium ribbon ?

Marks: 2

- ○ To make it more shinier
- ◉ To remove the oxide layer for better burning
- ○ To make it easier to hold
- ○ To increase the weight of the ribbon

Q1. What is the product formed when magnesium burns in the presence of oxygen ?

Marks: 2

- ○ Magnesium chloride
- ○ Magnesium carbonate
- ◉ Magnesium oxide
- ○ Magneisum Hydroxide

Q2. Which of the following is not an indication of chemical reaction ?

Marks: 2

- ○ Evolution of gas
- ○ Formation of precipitate
- ◉ Melting of a solid into liquid
- ○ Change in color

Q3. Which type of reaction occurs during respiration ?

Marks: 2

- ○ Exothermic reaction
- ○ Endothermic reaction
- ○ Redox reaction
- ◉ Both Exothermic and Redox reaction

Q4. Which of the following reaction occur during the burning of magnesium ?

Marks: 2

- ○ Magnesium undegoes reduction
- ◉ Magnesium undergoes oxidation
- ○ A neutralization reaction occurs
- ○ A displacement reaction occurs

Q5. What is the primary gas required for the combustion of magnesium ?

Marks: 2

- ○ Nitrogen
- ◉ Oxygen
- ○ Carbon dioxide
- ○ Hydrogen

Q0. In the activity described why is magnesium ribbon held with tongs ?

Marks: 2

- ○ Because it is too small to hold with fingers
- ◉ Because it reacts violently and is very hot when burnt
- ○ To avoid contamination
- ○ To ensure even burning

Q1. What is the color of the flame when magnesium burns ?

Marks: 2

- ○ Blue
- ○ Red
- ◉ White
- ○ Green

Q2. What kind of reaction is fermentation ?

Marks: 2

- ○ Physical
- ◉ Chemical
- ○ Nuclear
- ○ None of Above

Q3. Which of the following is an example of an irreversible reaction

Marks: 2

- ○ Dissolving salt in water
- ○ Evaporation of water
- ◉ Cooking food
- ○ Freezing of water

Q4. What type of reaction takes place when iron rust ?

Marks: 2

- ◉ Oxidation
- ○ Neutralization
- ○ Reduction
- ○ Polymerization

Q5. What happens when a chemical reaction occurs ?

Marks: 2

- ○ The total mass changes
- ○ The number of atom decreases
- ◉ The identity of the orignal substance changes
- ○ The substance undergoes only a state change

Q0. What is the purpose of adding an arrows in a word equation ?

Marks: 2

- ○ To seperate reactants from products
- ◉ To indicate the direction of the reaction
- ○ To show the type of chemical reaction
- ○ To represent the equation

Q1. Which change can help determine whether a chemical reaction has taken place ?

Marks: 2

- ○ Change in color
- ○ Evolution of gas
- ○ Change in state
- ◉ All of above

Q2. What is the product formed when zinc reacts with dilute sulphuric acid ?

Marks: 2

- ◉ Hydrogen gas
- ○ Magnesium Oxide
- ○ Zinc oxide
- ○ Lead nitrate

Q3. In the reaction between magnesium and oxygen, what are the reactants ?

Marks: 2

- ○ Magnesium and potassium iodide
- ○ Zinc and dilute sulphuric acid
- ◉ Magnesium and oxygen
- ○ Potassium iodide and lead nitrate

Q4. What is the purpose of using a word-equation to represent a chemical reaction ?

Marks: 2

- ○ To make it easier to read
- ○ To show the direction of the reaction
- ○ To seperate reactants from products
- ◉ To simplify the equation

Q5. In the reaction between potassium iodide and lead nitrate, what is the product formed Q5. ?

Marks: 2

- ○ Hydrogen gas
- ○ Magnesium oxide
- ◉ Lead iodide
- ○ Zinc oxide

Q0. What is the significance of using a plus sign (+) between reactants in a word Q0. equation ?

Marks: 2

- ○ To indicate the type of chemical reaction
- ◉ To sperate reactants from products
- ○ To show the direction of the reaction
- ○ To represent the equation

Q1. Why it is important to handle acid with care when performing an activity involving Q1. chemical reactions ?

Marks: 2

- ○ Because it can cause skin irritation
- ○ Because it can release toxic fumes
- ◉ Both a and b
- ○ Neither of Above

Q2. What is the difference between a word-equation and a chemical equation ?

Marks: 2

- ○ A word-equation uses symbols, while a chemical equatioon uses words.
- ○ A word-equation shows reactants on the LHS, while a chemical equation shows products on the RHS
- ○ There is no difference between the two
- ◉ A word equation represents physical change and chemical equation represents chemical change