Subject: Science **Time: 1 Hour** **Total Marks: 30**

Q1. Fill in the blanks (1 × 4 = 4 marks)

1. Red litmus turns _____ in a basic solution.
2. The white particles of baking soda disappear when put in lemon juice. This means it is a _____ change.
3. Sodium chloride is an _____ compound, while hydrogen chloride is a _____ compound.
4. The unit of temperature in SI is _____.

Q2. Match the Following (1 × 4 = 4 marks)

Group A	**Group B**
a. Tamarind	i. 212°F
b. Photosynthesis	ii. Lactic acid
c. Boiling point of water	iii. Covalent bond
d. Fluorine	iv. Tartaric acid

Q3. Classify the following substances into acidic, basic, and neutral groups (2 marks)
Classify: HCl, NaCl, NaOH, H_2O, $Ca(OH)_2$, H_2SO_4
(Write in table format)

Q4. Write the chemical names from the formulas (Any 4 – 0.5 mark each = 2 marks)
a) H_2SO_4
b) $Ca(OH)_2$
c) NaCl
d) NH_4OH
e) KOH

Q5. Show with the help of diagram of electronic configuration, how the following compounds are formed from constituent atoms (Any 1 – 4 marks)
Choose any one and draw diagram:
a) Sodium chloride
b) Hydrogen chloride

Q6. Explain by writing a word equation (Any 2– 4 marks)

Choose any one reaction and write a word equation:

a) Respiration

b) Reaction of vinegar with baking soda

c) Hard water softened by washing soda

Q7. Answer the following questions (Attempt any 2) (3 × 2 = 6 marks)

a) What is the difference between heat and temperature? What are their units?

b) Which acid is used to obtain chloride salts? How?

c) How can you test whether a chemical is acidic or basic if the label is spoiled?

Q8. Solve the following numerical (4 marks)

A substance of mass 3 kg receives 600 cal of heat, and its temperature increases by 10°C.

What is the specific heat of the substance?

(Use the formula and show steps)