WORKSHEET 2

CHAPTER 9 – PRACTICAL WORK

A. Tick (✓) the correct option.

1. A gas which turns moist blue litmus red and then bleaches it is
   a. CO_2. b. SO_2. c. Cl_2. d. H_2S.
2. The colour imparted by potassium chloride during flame test is
   a. blue green. b. pale green. c. violet. d. golden yellow.
3. Sodium on reaction with dilute sulphuric acid liberates
   a. hydrogen. b. oxygen. c. sulphur dioxide. d. hydrogen sulphide.
4. The gas having a characteristic smell of burnt sulphur is
   a. sulphuric trioxide. b. sulphur dioxide. c. hydrogen sulphide. d. nitrogen.
5. The salt which on heating gives one acidic gas and one basic gas is
   a. ammonium chloride. b. red lead. c. sodium hydroxide. d. sodium carbonate.

B. Complete the following sentences with the words given in the brackets.

1. Hard and soft water can be distinguished by using _____ (dilute acid/ordinary soap/detergent)
2. Unpolluted water has _____ (high/low) amount of dissolved oxygen.
3. The type of hard water softened by addition of washing soda is _____ (permanent/temporary)
4. The sample of hard water which lathers with soap after boiling and fitration contains _____ (calcium chloride/calcium bicarbonate)
5. Low specific conductance of water indicates _____ (less/more) pollution in water.

C. What will you observe when

1. dilute sulphuric acid is added to a carbonate salt?
2. washing soda is heated strongly?
3. carbon dioxide is passed through lime water in excess?
4. copper sulphate is heated above 650 °C?
5. ammonia is passed through Nessler's reagent?

D. Match the following.

1. Colourless, pungent smelling gas	Sulphur dioxide
2. Greenish, yellow gas	Hydrogen sulphide
3. Gas burns with a pop sound	Chlorine
4. Gas with a smell of rotten egg	Hydrogen
5. Acidic, non-combustible gas	Ammonia

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E. Answer the following.

1. Name the residue obtained when dilute sulphuric acid is added to potassium sulphite.
2. How would you convert
   a. magnesium to magnesium sulphate?
   b. ammonium dichromate to chromium oxide?
3. Give one point of distinction between the following pairs.
   a. Carbon dioxide and hydrogen
   b. Sodium sulphide and sodium sulphite
   c. Soaps and detergents
4. Using a platinum wire, concentrated hydrochloric acid and a bunsen burner, how would you distinguish between the three salts – sodium chloride, potassium chloride and calcium chloride? Explain the method used for the same in brief.
5. Copper (II) nitrate crystals are heated in a hard glass test tube.
   a. State the colour change in the crystals on heating.
   b. The coloured acidic gas evolved on heating, turns KI paper brown. Give the equation for the reaction.
   c. The colourless gas evolved on heating, turns a colourless solution brown, when absorbed in it. Name the colourless solution.

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ANSWERS

WORKSHEET 2

A. Tick (✓) the correct option.

1. c 2. c 3. a 4. b 5. a

B. Complete the following sentences with the words given in the brackets.

1. ordinary soap 2. high 3. permanent 4. calcium bicarbonate 5. less

C. What will you observe.

a. When dilute sulphuric acid is added to a carbonate salt, a colourless, carbon dioxide gas is evolved with a brisk effervescence.

b. When washing soda is heated strongly, it losses its water of crystallisation and forms a white amorphous powder.

c. When carbon dioxide is passed through lime water, it turns milky but in excess of carbon dioxide, the milkiness disappears.

d. When copper sulphate is heated above 650 °C, copper sulphate decomposes to copper oxide and sulphur dioxide. The released sulphur dioxide turns potassium permangnate solution from purple to colourless.

e. When ammonia is passed through Nessler's reagent, it turns colourless Nessler's reagent brown.

D. Match the following.

1. Colourless, pungent smelling gas	Ammonia
2. Greenish, yellow gas	Chlorine
3. Gas burns with a pop sound	Hydrogen
4. Gas with a smell of rotten egg	Hydrogen sulphide
5. Acidic, non-combustible gas	Sulphur dioxide

E. Answer the following.

1. Potassium sulphate

2. a. $\underset{\text{magnesium}}{Mg} + H_2SO_4 \longrightarrow \underset{\text{magnesium sulphate}}{MgSO_4} + H_2\uparrow$

b. $\underset{\substack{\text{ammonium}\\\text{dichromate}}}{(NH_4)_2Cr_2O_7} \longrightarrow \underset{\substack{\text{Chromium}\\\text{oxide}}}{Cr_2O_3} + N_2 + 4H_2O$

3. a.

Carbon dioxide	Hydrogen
Carbon dioxide extinguishes a burning splinter when brought near to it.	Hydrogen burns with a pale blue flame and produces a pop sound on burning when a burning splinter is brought near to it.

b.

Sodium sulphide	Sodium sulphite
When dilute sulphuric acid is added to sodium sulphide, a colourless gas having a foul smell of rotten egg is evolved. The evolved gas turns lead acetate paper silvery black.	When dilute sulphuric acid is added to sodium sulphite, a colourless gas having a smell of burnt sulphur is evolved. The evolved gas decolourises the purple coloured solution of potassium permanganate and has no effect on lead acetate paper.

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c.

Soaps	Detergents
Soaps are the compounds of long chain fatty acids and do not produce lather with hard water.	Detergents are sodium salts of sulphuric acid and produces lather with both soft as well as hard water.

4. A thin platinum wire is thoroughly cleaned by dipping in concentrated hydrochloric acid and then heating in a non-luminous flame till no colour is imparted by the wire. Dip the wire again in concentrated hydrochloric acid and then in a given compound. Hold the wire containing these compounds in the non-luminous zone of the flame of the burner one by one.

   Now, observe the colour imparted by the wire in each case for distinguishing these compounds according to the following table.

Colour of the flame	Inference
Gloden yellow	Sodium chloride
Violet	Potassium chloride
Brick red	Calcium chloride

5. a. On strong heating, the blue coloured copper nitrate turns black.

   b. $2KI + 2NO_2 \rightarrow 2KNO_2 + I_2$

   c. Alkaline pyrogallol solution.

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