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CLASS – X

CHEMISTRY HOLIDAYS HOMEWORK

1. A solution of a substance 'X' is used for testing carbon dioxide. What will be the reaction of X with carbon dioxide? Write balanced chemical equation for this reaction.

2. Balance the following chemical equations and identify the type of reactions:

(a) Ferrous sulphate crystals when heated produce solid ferric oxide, sulphur dioxide gas and sulphur trioxide gas.

(b) Solution of Barium chloride reacts with aluminium sulphate solution in water to give solution of aluminium chloride and insoluble barium sulphate.

3. Give reasons for the following:

(a) Silver chloride is stored in dark coloured bottles?

(b) Oxidation and reduction processes occur simultaneously.

4. On heating blue coloured powder of copper (II) nitrate in a boiling tube, copper oxide (black), Oxygen gas and a brown gas X is formed.

a. Write a balanced chemical equation of the reaction.

b. Identify the brown gas X evolved.

c. Identify the type of reaction.

d. What could be the pH range of the aqueous solution of the gas X?

5. Write the chemical equation of the reaction in which the following changes have taken place:

i. Change in colour.

ii. Change in temperature

iii. Formation of precipitate

6. (a) Three acidic solutions A, B and C have pH = 0, 3 and 5 respectively.

Which solution has the

(i) highest concentration of H+ ions?

(ii) lowest concentration of H+ ions?

(b) A compound which is prepared from gypsum has a property of hardening when mixed with proper quantity of water. Identify the compound and write its chemical formula.

7. (a) Define olfactory indicators. Name two substances which can be used as olfactory indicators.

(b) Five solutions A, B, C, D and E showed pH as 4,7,1,11 and 9 respectively when tested with universal indicator. Which solution is

i. neutral ii. strongly alkaline

iii. strongly acidic. iv. weakly acidic

8. Give reasons for the following:

(i) Only one half of water molecule is shown in the formula of Plaster of Paris.

(ii) Sodium hydrogen carbonate is used as an antacid.

(iii) On strong heating, blue coloured copper sulphate crystals turn white.

9. A cloth strip dipped in onion juice is used for testing a liquid 'X'. the liquid changes its odour. Which type of an indicator is onion juice? The liquid X terms blue litmus red. List the observations the liquid X will show on reacting with the following:

(a) Zinc granules

(b) Solid sodium carbonate.

Write the chemical equations for the reactions involved.

10. (a) Define water of crystallization. Give the chemical formula for two compounds as examples.

(b) Complete and balance of following chemical equations:

i. $NaOH\ (aq) + Zn\ (s) \longrightarrow$

ii. $CaCO3\ (s) + H2O\ (l) + CO2\ (g) \longrightarrow$

iii. $HCl\ (aq) + H2O(l) \longrightarrow$

(c) How are bases different from alkalis?