

SARALA BIRLA ACADEMY BANGALORE
Half Yearly Examinations 2008– 2009

Science 2 (Chemistry)
Grade VIII

(One and a half hours)

Saturday: 20/09/2008

*Answers to this Paper must be written on the paper provided separately.
You will not be allowed to write during the first 15 minutes.
This time is to be spent in reading the question paper.
The time given at the head of this Paper is the time allowed for writing the answers.*

*This Paper is divided into two parts, Part I and Part II.
Part I (40 marks) contains short answer questions set from the entire syllabus.
You are required to answer all questions.
Part II (40 marks) consists of Six questions.
You are required to answer **FOUR** out of **FIVE** questions from Part II.
The intended marks for questions or parts of questions are given in bracket []*

Part I (40 Marks)
(Attempt all questions)

Question 1

(a) Select the correct term from the terms A to F given below, correlating with each statement 1 to 5. [5]

- (1) Various colour pigments of chlorophyll can be separated using this technique
- (2) Process of changing from solid state to gaseous state.
- (3) A separation technique to separate two solid mixtures having different mass
- (4) Process used to separate a mixture of immiscible liquids.
- (5) Process used to separate a mixture of miscible liquids.

- A. Fractional distillation
- B. Paper chromatography
- C. Gravity separation
- D. Separating funnel
- E. Sublimation

(b) Select the correct answer from A to E pertaining to the elements 1 to 5. [5]
A. Metal B. Liquid non-metal C. Gaseous non-metal D. liquid metal E. Nobel gas

1. Hydrogen
2. Argon
3. Tungsten
4. Bromine
5. Mercury

(c) State, which of the following 1 to 5, pertain to A. Physical change B. Chemical change. [5]

1. Composition of the molecule of the substance is altered.
2. Change takes place in colour and solubility of the substance.
3. Energy required for the completion of the change is released on reversing the change.
4. Matter undergoes changes but total mass is unaltered.
5. Change takes place in the form or state only.

(d) Fill in the blanks with the correct word from the words in brackets: [5]

1. A chemical equation is a short hand form for a _____ (physical / chemical change).
2. Variable valance is exhibited, since electrons are lost from an element from the _____ (valence / last but one) shell.
3. _____ (Naphthalene / sodium / common salt) is an example of a solid that sublimates in the absence of heat.
4. Solidification is also termed as _____ (fusion / melting / freezing)
5. The kinetic energy of molecules in its solid state is _____ (lower / higher) than that of in its gaseous state.

(e) Give reason for the following: [5]

1. Using a magnet, one can't separate a mixture of sugar and common salt.
2. Air is not a compound.
3. Burning of a substance is a chemical change.
4. Solid iodine upon heating directly changes to gaseous state.
5. Conversion of water into ice is not a chemical change.

(f) Balance the following equations: [5]

1. $\text{Fe}_2\text{O}_3 + \text{C} \longrightarrow \text{Fe} + \text{CO}_2$
2. $\text{Fe} + \text{H}_2\text{O} \longrightarrow \text{Fe}_2\text{O}_3 + \text{H}_2$
3. $\text{Mg} + \text{N}_2 \longrightarrow \text{Mg}_3\text{N}_2$
4. $\text{CuO} + \text{NH}_3 \longrightarrow \text{Cu} + \text{H}_2\text{O} + \text{N}_2$
5. $\text{NaOH} + \text{HNO}_3 \longrightarrow \text{NaNO}_3 + \text{H}_2\text{O}$

(g) Write the balanced equation for the following word equations: [5]

1. Potassium Nitrate \longrightarrow Potassium Nitrite + oxygen
2. Calcium + water \longrightarrow Calcium hydroxide + hydrogen
3. Iron + Chlorine \longrightarrow Iron (III) Chloride
4. Aluminium + Oxygen \longrightarrow Aluminium Oxide
5. magnesium + hydrochloric acid \longrightarrow magnesium chloride + hydrogen

(h) Write the name of the following compounds: [5]

1. $\text{Ca}_3(\text{PO}_4)_2$
2. H_2SO_4
3. HNO_3
4. AlN
5. H_2CO_3

PART-II (40 marks)
(Answer any FOUR)

Question 2.

- a) Give two differences between physical and chemical change [4]
- b) In three containers A, B and C three liquids are there which are colourless, odourless and tasteless and one of them is water Give one physical and two chemical test to identify the container which is having water. [6]

Question 3.

- a) Draw a labelled diagram for simple distillation apparatus and label any three parts [6]
- b) Give a balanced equation for the reaction between Magnesium and steam, [2]
- c) What do you mean by oxidation, give one example [2]

Question 4.

- a) Differentiate between mixture and a compound (any one difference) [2]
- b) Air is considered as mixture where as water as a compound – explain why? [2]
- c) State with equation what will happen when a lump of potassium is dropped in cold water [2]
- d) An element X is trivalent, what will be the formula of its oxide [2]
- e) What is the formula of Ammonium bisulphite [1]
- f) Give the name of the element which has a symbol 'F' [1]

Question 5.

- a) Why water is called a universal solvent? [2]
- b) What will happen if a hot iron piece is placed in a stream of water vapour? Give equation for the reaction which will take place [2]
- c) What is the meaning of the term variable valance, explain with an example [2]
- d) Balance the following equation: $[H_2SO_4 + S \longrightarrow SO_2 + H_2O]$ [2]
- e) Convert the word equation to chemical equation [sodium + water \longrightarrow sodium hydroxide + hydrogen gas] [2]

Question 6.

- a) Write the formula of the following compounds: [3]
 - a. Copper (II) carbonate,
 - b. Sodium chloride
 - c. Ammonium sulphate
- b) Write the name of the following compounds: [3]
 - a. KCl
 - b. MgO
 - c. $Al_2(SO_4)_3$
- c) Write a chemical equation for the reaction that takes place between magnesium metal and steam [2]
- d) How does water react with the following (give balanced equation in each case) [2]
 - a. Carbon dioxide
 - b. Sulphur trioxide