V I B G Y O R H I G H

Second Term Examination

2019-2020

CHEMISTRY

Grade: VIII **Max. Marks : 80**

Date : 11/03/2020 **Time allowed : 2 hours**

INSTRUCTIONS:

- **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.**
- **The intended marks for the questions or parts of questions are given alongside the questions.**
- **This question paper contains 8 printed pages.**

SECTION I [40 marks]
Attempt all Questions from this section

Question 1

A. **Complete the following:** **[5]**

(i) Thermal dissociation unlike thermal decomposition is a_____ reaction. [1]

(ii) Permanent hard water is one whose hardness cannot be removed by_____. [1]

(iii) _____ substances, on exposure to atmosphere absorb moisture and change into a saturated solution. [1]

(iv) Diamond has a sparkling brilliance due to_____. [1]

(v) A mixture of 95% oxygen and 5% carbondioxide is known as_____. [1]

B. Answer the following: **[5]**

(i) Which disease may be caused by consumption of contaminated water? [1]

(ii) What is an amphoteric oxide? [1]

(iii) Which type of elements form positive ions? [1]

(iv) Why is carbon monoxide gas highly poisonous? [1]

(v) What do you mean by allotropy? [1]

C. Choose the correct answer: **[10]**

(i) Which of the following metals do not displace hydrogen from dilute acids? [1]

(a) Al

(b) Zn

(c) Ag

(d) Ca

(ii) Select the immiscible mixture: [1]

(a) Alcohol and water

(b) Glycerine and water

(c) Milk and water

(d) Kerosene and water

(iii) Which one is **not** a property of carbon dioxide? [1]

(a) Colourless and odourless gas

(b) Slightly sour in taste

(c) Insoluble in water

(d) 1.5 times heavier than air

(iv) Diamond is used for: [1]

(a) Making the electrodes of electric furnaces

(b) Making crucible for melting metals

(c) Cutting and drilling rocks and glass

(d) Making carbon brushes for electric motors

(v) A nitrogen molecule is formed as a result of sharing of electrons between two reacting nitrogen atoms. Bonding in nitrogen will be: [1]

(a) Ionic

(b) Electrovalent

(c) Covalent

(d) Molecular

(vi) Which gas is released when carbon is burnt in a limited supply of air? [1]

(a) Water gas

(b) Carbon monoxide

(c) Producer gas

(d) Carbon dioxide

(vii) The given gases are absolutely stable, except: [1]

(a) Oxygen

(b) Neon

(c) Krypton

(d) Xenon

(viii) Number of valence electrons in hydrogen atom: [1]

(a) 1

(b) 2

(c) 3

(d) 4

(ix) In combined state carbon occurs as: [1]

(a) Coal

(b) Diamond

(c) Graphite

(d) Petroleum

(x) CO is a/an_____ oxide. [1]

(a) Acidic

(b) Neutral

(c) Basic

(d) Amphoteric

D. **State your observation when:** **[5]**

(i) Magnesium ribbon is burnt in carbon dioxide gas. [1]

(ii) Carbon dioxide gas is passed through lime water solution in excess. [1]

(iii) Blue crystals of copper sulphate are heated. [1]

(iv) Wood charcoal is added to a solution of blue ink. [1]

(v) Aqueous solution of ferric chloride is added to sodium hydroxide solution. [1]

E. **Match the following:** **[5]**

A	B
(i) Green vitriol	a. Hygroscopic
(ii) A tetravalent atom	b. Peat
(iii) A mineral carbonate	c. Carbon
(iv) Inferior quality coal	d. Heptahydrate
(v) Calcium oxide	e. Limestone

F. **Write a balanced equation for each of the following reactions:** **[5]**

(i) Thermal decomposition of potassium nitrate. [1]

(ii) Reaction of washing soda and calcium sulphate. [1]

(iii) Reaction of carbon dioxide with ammonia gas to form a nitrogenous fertilizer. [1]

(iv) Reduction of zinc oxide to zinc by wood charcoal. [1]

(v) Reaction of water with sodium oxide. [1]

G. **Answer the following:** **[5]**

(i) Why is water called as a universal solvent? [1]

(ii) What is the role of a catalyst in a chemical reaction? [1]

(iii) How is pure dry carbon dioxide gas collected during its lab preparation? [1]

(iv) How is lampblack obtained? [1]

(v) What is electrovalent bond? [1]

SECTION II [40 Marks]

Attempt **any four** Questions from this section

Question 2

A. **Identify the type of reaction:** **[5]**

(i) $CaO + H_2O \longrightarrow Ca(OH)_2$ [1]

(ii) $NaCl + AgNO_3 \longrightarrow NaNO_3 + AgCl$ [1]

(iii) $2KClO_3 \xrightarrow{Heat} 2KCl + 3O_2$ [1]

(iv) $Zn + CuSO_4 \longrightarrow ZnSO_4 + Cu$ [1]

(v) $NaOH + HCl \longrightarrow NaCl + H_2O$ [1]

B. **Answer the following:** **[5]**

(i) How does the solubility of gases in water change with respect to temperature of water? [1]

(ii) How is coal formed? [1]

(iii) Why do atoms form chemical bonds with each other? [1]

(iv) What is activity series? [1]

(v) What is the function of concentrated sulphuric acid taken in a washer bottle during the preparation of carbon dioxide? [1]

Question 3

A. Draw atomic orbit structure diagram to show the formation of calcium oxide. **[2]**

B. **Give two uses of the following:** **[3]**

(i) Carbon monoxide [1]

(ii) Graphite [1]

(iii) Coal [1]

C. **Write balanced chemical equation for the following:** **[5]**

(i) Action of carbon monoxide on heated nickel. [1]

(ii) Heating of coke in presence of air. [1]

(iii) Dehydration of glucose by concentrated sulphuric acid. [1]

(iv) Decomposition of zinc hydroxide. [1]

(v) Reaction of calcium with water. [1]

Question 4

A. **Give reasons for the following:** **[6]**

(i) Washing soda can be used to remove both temporary and permanent hardness in water. [2]

(ii) Copper does not react with dilute acids. [2]

(iii) On opening a bottle of soda, a fizz sound is heard. [2]

B. **Mention two points of difference between:** **[4]**

(i) An acidic oxide and a basic oxide. [2]

(ii) Diamond and graphite [2]

Question 5

A. Consider three substances: **[5]**

Lampblack, wood charcoal, coke

(i) What is the common element present in all the three? [1]

(ii) When steam is passed through wood charcoal, a mixture of gases is formed. Write the balanced chemical equation involved. [1]

(iii) Identify the substance that is used in printer ink. [1]

(iv) Which property of coke makes it useful in iron and steel production? [1]

(v) Why is wood charcoal used as an adsorbent? [1]

B. **Name the following:** **[5]**

(i) An electrovalent compound formed by transfer of one electron from a metallic atom to a non-metallic atom. [1]

(ii) Process of random movement of colloidal particles. [1]

(iii) The carbon compound used in soda acid fire extinguishers. [1]

(iv) A substance added to the catalyst to increase its efficiency. [1]

(v) A superior type of coal which burns with non-smoky flame. [1]

Question 6

A. **Write balanced equations for each of the following reactions:** **[5]**

(i) Preparation of carbon dioxide by action of dilute hydrochloric acid on calcium carbonate. [1]

(ii) Reaction of iron with steam. [1]

(iii) Formation of ammonia from nitrogen and hydrogen gases. [1]

(iv) Passage of carbon dioxide through lime water resulting in formation of an insoluble compound. [1]

(v) Reaction of sulphur trioxide with water.

B. A metal 'X' revolves on the surface of water and burns with a golden yellow flame and results in the formation of an alkali 'Y'. **[5]**

(i) Name the metal 'X'. [1]

(ii) Name the alkali 'Y'. [1]

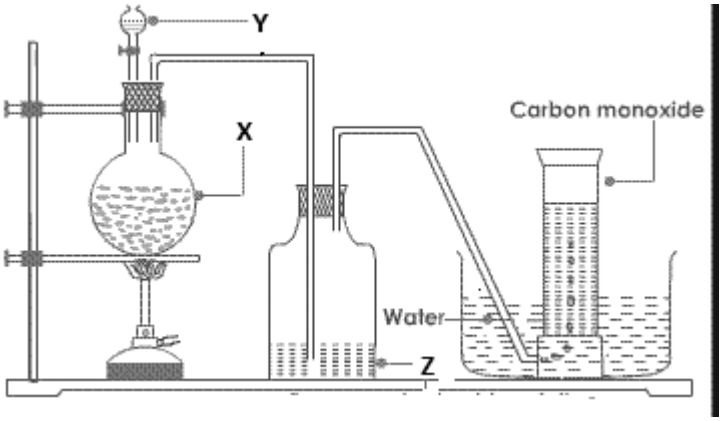
(iii) Give balanced equation for the reaction between metal 'X' and water to give 'Y'. [1]

(iv) What type of reaction is this- Exothermic or Endothermic? [1]

(v) Is solid alkali 'Y' an efflorescent or deliquescent substance? [1]

Question 7

A. The figure given below represents the arrangement of the apparatus for the preparation of carbon monoxide gas, using liquids 'X' and 'Y'. **[5]**



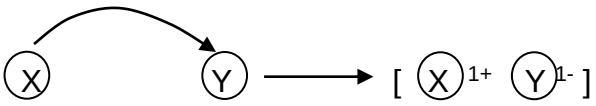
(i) If liquid 'X' is concentrated sulphuric acid, name 'Y'. Also give equation of reaction between 'X' and 'Y'. [2]

(ii) Name the solution 'Z' and mention it's function in this process. [2]

(iii) Why is carbon monoxide gas collected by downward displacement of water? [1]

B. Define covalent compound. Give one suitable example. **[2]**

C. The representation below shows the outline formation of a compound: **[3]**



If the atomic number of element 'X' is 11 and of element 'Y' is 17:

(i) What type of bond is formed between 'X' and 'Y'? [1]

(ii) Does 'Y^{1-}' have a stable or an unstable electronic configuration? [1]

(iii) State why an electron is transferred from 'X' to 'Y' during the formation of 'XY'? [1]

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