

KAPOL VIDYANIDHI INTERNATIONAL SCHOOL(ICSE)
TEMPLE OF KNOWLEDGE

16/12/20 STD:IX	Second Terminal Examination CHEMISTRY	DUR:2Hrs Marks: 80
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*Answer 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.
Time given at the head of this paper is the time allowed for writing the answers.
Section I is compulsory. Attempt any four questions from **Section II**.
The intended marks for questions or parts of questions are given in the bracket []*

SECTION –I (40 MARKS)
(Attempt all questions from this section)

Question 1:

- a) Fill In the blanks with the correct choice from the options given in the brackets: [5]
1. The molecular formula of sodium carbonate is _____. [Na₂CO₃ / NaCO₃]
 2. In an ionic compound, the bond is formed due to _____ of electrons [sharing /transfer]
 3. In the modern periodic table, metallic character _____ across the period from left to right. [increases /decreases]
 4. The chemical reaction in which heat is evolved is known as _____ reaction. [endothermic /exothermic]
 5. Melting point of ice is _____ in Kelvin scale, [zero/273]
- b) Choose the correct answer from the options given below: [5]
1. The molecular formula of ferric sulphate is:
A]FeSO₄ B] Fe₃SO₄ C] Fe₂(SO₄)₃ D]Fe(SO₄)₃
 2. An isotope of an element has:
A] same physical properties. B] different chemical properties.
C] different atomic number. D] different number of neutrons.
 3. Which noble gas has an electronic configuration like that of Na¹⁺ :
A] Argon B] Neon C] **Helium** D] Krypton
 4. A chemical reaction in which two or more elements or compounds react to form one new compound:
A] double decomposition B] direct combination
C] decomposition D] displacement

5. In the periodic table alkaline earth metal belongs to :
 A] Zero Group B] 2nd Period C] 3rd Period D] 2nd Group

- c] Name the following: [5]
1. Halogen in the 2nd period.
 2. A liquid hygroscopic substance.
 3. The gas evolved when copper carbonate is strongly heated.
 4. The gas formed when nitrogen combines with hydrogen.
 5. One metal which exhibits variable valency.

- d] Match the column: [5]
 Copy first the list 1 and match with list II :

List I	List II
1] Duplet	A] Halogen
2] 2 electrons in valence shell	B] Inert gas
3] Electronic configuration 2,8,1	C] Alkaline earth metal
4] Atomic number 17	D] Transition element
5] Electronic configuration 2,8	E] Alkali metal

- e] A] Write the following chemical equation and balance them: [3]
1. Silver[I]oxide + hydrogen peroxide → silver + water + oxygen
 2. Aluminium + sodium hydroxide + water → sodium aluminate + hydrogen
 3. Iron + hydrochloric acid → Iron[II]chloride + hydrogen

- B] Find the percentage of sulphur in Iron [II]sulphate [2]
 [Fe=56 S=32 O=16]

- f] Complete the table below pertaining to formation of covalent compounds copy the table: [5]

Formation of a compound between	Atomic number	Number of covalent bond in the molecule.
A] Two atoms of A	9	
B] Two atoms of B	7	
C] Two atoms of C	8	
D] Two atoms of D	1	
E] Two atoms of E	17	

g] Complete the table pertaining to the following elements given in column I

[5]

Column I elements	Atomic number	Select the element present in that group
1]Hydrogen	1	Be / Ca / K
2]Carbon	6	N / P / Si
3] Nitrogen	7	C / P / S
4] Sulphur	16	O / N / F
5] Chlorine	17	I / O / S

h] A] Answer the following : At STP

[2]

Pressure _____ and Temperature _____

B] Give reason for the following :

[3]

1. Gases have low densities compared to solids or liquids.
2. Silver nitrate solution is kept in coloured reagent bottles in the laboratory .
3. Noble gases do not form compounds readily.

SECTION –II (40 MARKS)

(Attempt any four questions from this section)

Question 2:

a] The formula of the chloride of a metal **M** is MCl_2 state the formula of its:

[3]

1. Carbonate
2. Nitrate
3. Hydroxide

b] Balance the following chemical equations:

[3]

1. $Mg_3N_2 + H_2O \rightarrow Mg(OH)_2 + NH_3$
2. $Pb(NO_3)_2 \rightarrow PbO + NO_2 + O_2$
3. $Fe + H_2O \rightarrow Fe_3O_4 + H_2$

- c) Name the following: [4]
1. Noble gas having electronic configuration 2,8,8
 2. A non-metal in period 2 which is tetravalent
 3. A metal in period 3 having valency 3
 4. An alkaline earth metal in period 3

Question 3:

- a) Name the solid residual product formed in each reactions and state its colour during thermal decomposition of the substance [4]

Substance	Name of the solid residue	Colour of the solid residue
1]Copper nitrate		
2]Ammonium dichromate		

- b) Categorize the following salts into 3 types:copy the table [6]
- FeCl₃ , P₂O₅ , CaO , Na₂SO₄ . H₂O , anhydrous CaCl₂ , NaOH**

Efflorescent	
Deliquescent	
Hygroscopic	

Question 4:

- a) Fill in the blanks: [4]
1. An element has electronic configuration 2,8,1 and 12 neutrons .Its mass number is_____.
 2. The maximum number of electrons in M-shell is _____.
 3. An _____ is capable of independent existence in solution.
 4. An atom with electronic configuration 2,7 and mass number 19 will have _____ neutrons.
- b) Draw atomic structure of formation of water molecule and label lone pairs: [2]
- c) Name the law illustrated by the following relationship: [2]
1. $PV=K$ at constant temperature
 2. $\frac{V}{T} = K$ at constant pressure
- d) A gas occupies 24.4 L at STP .Calculate the temperature at which it will occupy a volume of 10.0 L at 2.46 atm?[round off to nearest K and give final answer in °C] [2]

Question 5:

a] The representation below shows the outline formation of electrovalent compound . [6]



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

1. State why an electron is transferred from X to Y during the formation of XY
2. Give a reason why electrons are not shared between X and Y during the formation of XY.
3. State the difference between X and X⁺
4. Does Y¹⁻ have a stable or an unstable electronic configuration.
5. If a compound is formed from atom A [Z=19] and atom Y [Z=17] would the compound AY be an electrovalent or covalent compound. Give reasons

b] Correct the incorrect molecular formula and give the chemical name of the compound : [4]

1. NaZnO₂
2. KCr₂O₇
3. NaO
4. AlN₃

Question 6:

a] Match the chemical reaction in List I with the appropriate answer in List II [5]

List I	List II
1] $AB \xrightarrow{\Delta} A+B$	A] Double decomposition
2] $AB \rightarrow A+B$	B] Thermal dissociation
3] $X^+Y^- + A^+B^- \rightarrow X^+B^- + A^+Y^-$	C] Endothermic reaction
4] $X + YZ \rightarrow XZ + Y$	D] Displacement Reaction
5] $X + Y \xrightarrow{\Delta} XY - \Delta$	E] Decomposition reaction

b] Complete the given table pertaining to isotopes of hydrogen copy the table and answer [3]

Isotopes	Z	A	p	e	n
1] Protium					
2] Deuterium					
3] Tritium					

c] [2]
 1. The physical properties of isotopes of the same element are not identical
 2. Group 1 elements are called alkali metals.

Question 7:

a) Complete the table: first one is

Atomic number	Identify the elements	Group number	Period
1]3			
2]10			
3]20			
4]7			
5]14			

[5]

b) A sample of the gas occupies 12 L at 227 °C and 1 atm pressure .The gas is cooled to -73°C at the same pressure .What would be the volume of the gas?

[2]

c) Answer the following :

1. 1 atmosphere _____ mm Hg

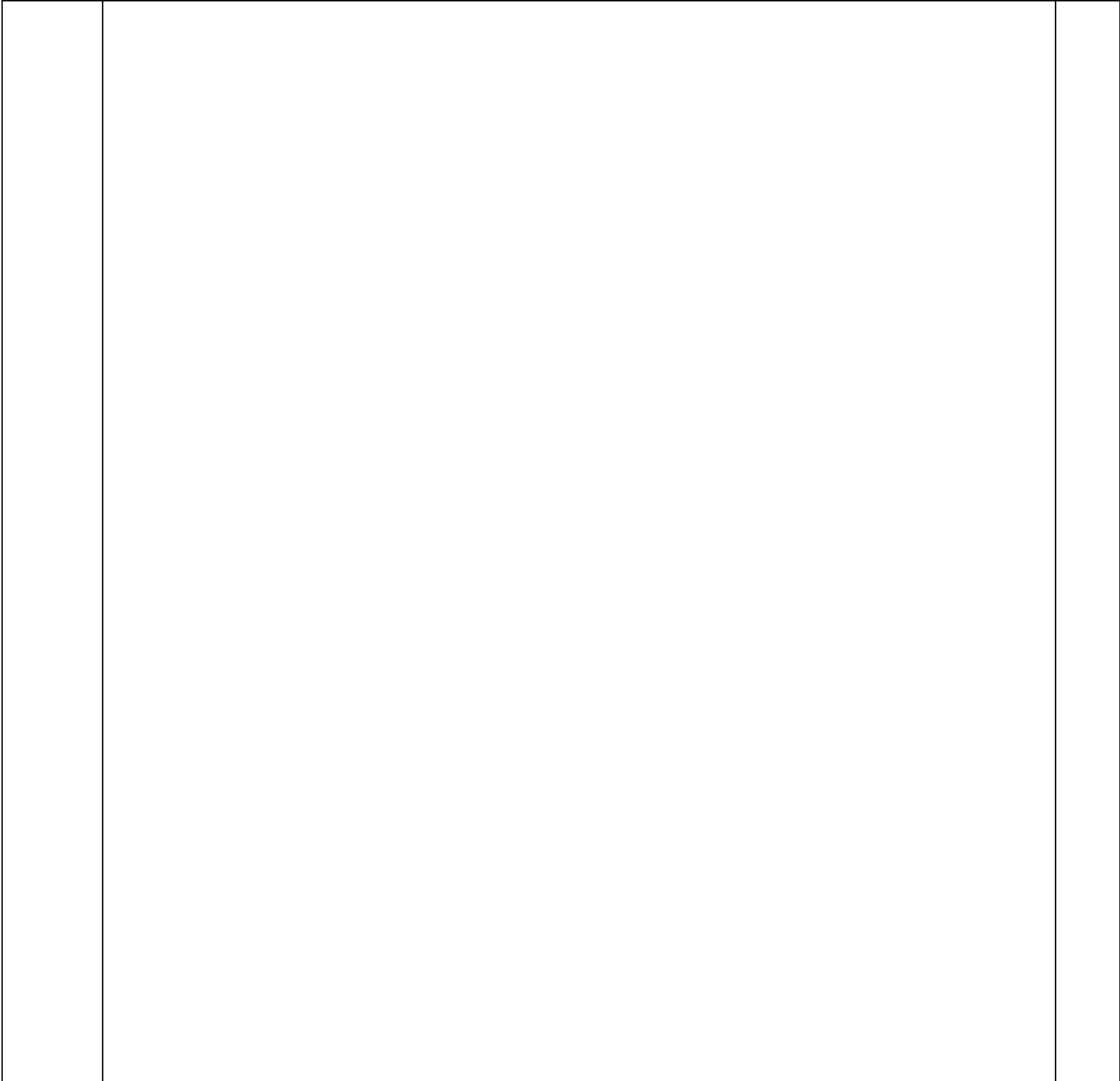
2. 1L _____ cc

3. 22°C _____ K

[3]

ALL THE BEST

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