DELHI PUBLIC SCHOOL NEWTOWN

SESSION: 2025-2026

MONDAY TEST

CLASS: IX **FULL MARKS: 40**

SUBJECT: CHEMISTRY **DATE: 30/06/2025**

General Instructions:

- **The paper consists of three printed pages.**
- **All questions are compulsory.**
- **Copy the question number carefully before answering the questions.**

SECTION A (20 MARKS)

Attempt all questions

Question 1

Chose the correct answers from the options given below: **[8]**

i) Composition of nuclei of two atoms X and Y are given below:

	X	Y
Number of protons	8	8
Number of neutrons	8	10

The mass number of X and Y and their relation is:

(A) 16, 18; Isotopes (B) 16, 16; Isobars

(C) 16, 18; Isotones (D) 18, 18; Isomers

ii) A has 9 protons, 9 electrons, and 10 neutrons.
B has 12 protons, 12 electrons and 12 neutrons.
The formula of the compound formed between A and B is:

(A) A_2B (B) BA_2 (C) B_2A_3 (D) AB_4

iii) Assertion (A): Aluminium reacts with both acids and alkalis forming salt and hydrogen.
Reason (R): Aluminium is an amphoteric metal.

(A) Both A and R are correct, and R is the correct explanation of A

(B) Both A and R are correct, and R is not the correct explanation of A

(C) A is false but R is true

(D) A is true but R is false

iv) In the reaction given below the reducing agent is:

$$H_2S + Cl_2 \rightarrow 2HCl + S$$

(A) Chlorine (B) Hydrogen chloride

(C) Hydrogen sulphide (D) Sulphur

v) In the given redox reaction: $Zn + Cu^{2+} \rightarrow Zn^{2+} + Cu$

(A) Zn is reduced to Zn^{2+} (B) Cu^{2+} is oxidised to Cu

(C) Zn is oxidised to Zn^{2+} (D) Cu is oxidised to Cu^{2+}

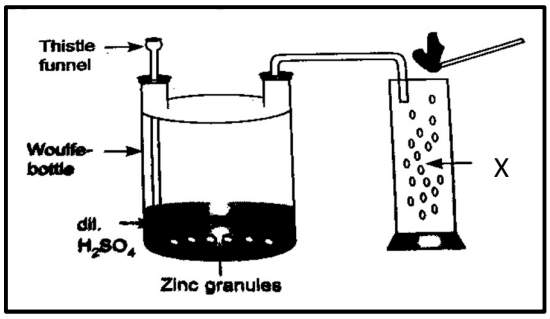
vi) Consider the following chemical equation:

$$a\ PbS + b\ O_2 \rightarrow c\ PbO + d\ SO_2$$

In order to balance this chemical equation, the values of a, b, c and d must be:

(A) 2, 2, 3, 2 (B) 2, 3, 2, 2 (C) 2, 3, 2, 3 (D) 2, 2, 3, 3

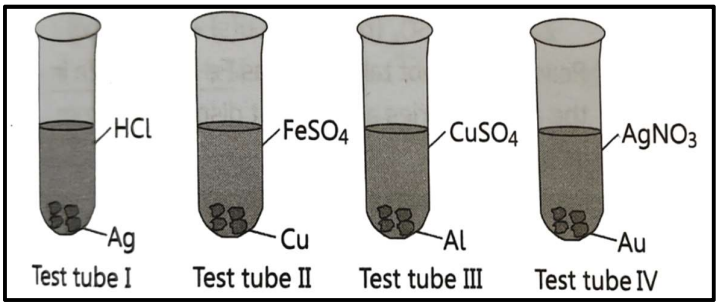
vii) Study the diagram given below:



The method of collecting gas X depicted in the above diagram is incorrect because:

(A) Gas X is heavier than air
(B) Gas X is lighter than air
(C) Gas X forms and explosive mixture with air
(D) Gas X will extinguish the burning splinter

viii) A student performs the following four experiments:



The correct increasing order of the reactivity of the metals is:

(A) Au, Ag, Cu, Al (B) Au, Al, Ag, Cu (C) Al, Ag, Cu, Au (D) Cu, Ag, Al, Au

Question: 2 [4]

i) Name the following:

a) A nitrate which on heating leaves no residue.
b) A gaseous oxide which is a reducing agent.
c) A compound which decomposes in presence of sound.
d) A compound which slows the rate of decomposition of hydrogen peroxide.

ii) Complete the following ionic equations and classify them into oxidation or reduction reactions: [4]

a) $Mn^{7+} \rightarrow Mn^{5+}$
b) $Cr^{3+} \rightarrow Cr^{6+}$
c) $Cl^{1-} \rightarrow Cl$
d) $O \rightarrow O^{2-}$

iii) Write the formula of ammonium nitrate. Calculate the percentage of nitrogen and oxygen in ammonium nitrate. [N = 14, O = 16, H = 1] [4]

SECTION B (20 MARKS)

Attempt all questions

Question: 3

i) XCl_2 is the formula of the chloride of metal X.

a) State the valency of metal X.

b) Write the formula of the (I) phosphate and

(II) zincate of metal X [3]

ii) Hydrated copper sulphate has the formula $CuSO_4.XH_2O$ contains 36% water of crystallisation. Determine the value of X. [Cu = 64, S = 32, O = 16, H = 1] [2]

Question: 4

Rahul heated a white crystalline solid P decomposed with a crackling sound, a reddish-brown gas Q with an irritating odour is released along with a colourless odourless gas R which rekindles a glowing splinter and a buff yellow residue S is obtained.

i) Identify P and Q.

ii) What would Rahul observe when gas R is bubbled through alkaline pyrogallol solution.

iii) Write balanced chemical equation for the reaction when P is heated.

iv) Rahul observed that residue S dissolved in hot concentrated sodium hydroxide. Which property of residue S did Rahul get to know? [5]

Question: 5

i) With respect to industrial preparation of hydrogen answer the following:

a) Name the catalyst and the promoter used in this process.

b) Write balanced chemical equation for the endothermic reaction.

c) How is unused carbon monoxide removed from hydrogen gas produced?

d) What is water gas? [5]

Question: 6

i) The electronic configuration of Q^{2-} is 2, 8.

a) What is the atomic number of Q?

b) Write the electronic configuration of Q. [2]

ii) Give reasons for the following:

a) The chemical properties of C^{12} and C^{14} are same.

b) Neon is chemically inert.

c) The actual mass of an atom is greater than its mass number. [3]