FIRST TERM EXAMINATION 2025-2026

STANDARD – X

SUBJECT - CHEMISTRY

TIME: 2 HRS. **M.M:80**

SECTION-A (40 MARKS)

(All questions are compulsory)

Q1. Choose the correct answers: (15)

1. An element A belonging to period 3 and group 3 will have

a) 3 shells and 2 valence electrons
b) 2 shells and 3 valence electrons
c) 3 shells and 3 valence electrons
d) 2 shells and 2 valence electrons

2. Select the element in period 3 whose electron affinity is zero.

a) Neon b) Argon
c) Sulphur d) Sodium

3. Coordinate bond is formed

a) by exchange of electrons
b) by equal sharing of electrons
c) by one way sharing of electrons
d) None of these

4. A pH value less than 7 indicates that the solution is:

a) Acidic b) Basic
c) Neutral d) No effect

5. The metallic oxide which, when reacts with HCl forms salt and water is

a. Carbon monoxide b. Nitrous oxide

c. Ammonium hydroxide d. Sodium oxide

6. **Lead Chloride is prepared by**
   a. Direct Synthesis b. Precipitation
   c. Double decomposition d. Double displacement
7. **The molecule containing a triple covalent bond is**
   a. Ammonia b. Water
   c. Ammonia d. Nitrogen
8. **Alkaline earth metals include:**
   a. Group 2 elements b. Group 11 elements
   c. Group 1 elements d. Group 18 elements
9. **Why do atoms share electrons in covalent bonds?**
   a. To increase their atomic number
   b. To attain a noble-gas electron configuration
   c. To become polar
   d. To become ions and attract each other
10. **Dilute hydrochloric acid reacts with metals, producing**
    a. H_2 b. Co_2
    c. Cl_2 d. H_2S
11. **An example of a monobasic acid is**
    a. HNO_3 b. HCOOH
    c. H_2SO_4 d. H_2CO_3
12. **Ammonia burns in an atmosphere of oxygen with a ____ flame**
    a. Blue b. Green
    c. Yellow d. Brown
13. **The colour of precipitates formed when copper sulphate reacts with ammonium hydroxide**
    a) Pale blue b) White
    c) Dirty green d) Reddish brown
14. **With excess of chlorine, NH_3 forms**

a) NH_4Cl b) Ncl

c) NOCl d) N

15. An alkali earth metal:

a) Potassium b) Calcium

c) Lead d) Copper

Q2.

1. Complete the following by choosing answers from the bracket: **(5)**

a) If an element has a low ionization energy then it's likely to be ___ (metallic/non-metallic).

b) The salt prepared by the method of direct synthesis is ____(Iron II chloride/Iron III chloride).

c) Ammonia gas is collected by _____ (Upward/downward) displacement of air.

d) When HCl gas is passed through silver nitrate solution, curdy white precipitate of____(AgCl, $PbCl_2$)is produced.

e) In covalent compounds, the bond is formed by_____ (sharing/ transfer) of electrons.

2. Match the following column A with column B **(5)**

Column A	Column B
a) Sodium Chloride	Fountain experiment
b) Normal salt	weak van der waals forces of attraction
c) $FeCl_3$ from Fe	Na_2SO_4
d) Solubility of Hcl	Direct synthesis
e) Covalent compounds	Ionic bond

3. Identify the following: **(5)**

a) Number of lone pair in water.

b) A gas evolved when HCl reacts with metal sulphide.

c) The energy released when an atom in the gaseous

state accept an electron to form an anion

d) A salt prepared by displacement reaction

e) An element having electronic configuration 2,8,3

4. Complete and balance the following equation (5)

a) $H_2SO_4 + 2NaOH$ · (dil)

b) $AgNO_3 + HCl$ ·

c) $AlN + H_2O$ ·

d) $MgCO_3 + 2HNO_3 \rightarrow$

e) $CaO + H_2SO_4 \rightarrow$

5. Give reasons: (5)

a) Blue fountain is seen during fountain experiment with ammonia.

b) Flourine has the highest electronegativity in the periodic table.

c) Covalent compounds are non-conductors of electricity.

d) HCl gives dense white fumes with ammonia gas.

e) Ammonia gas cannot be collected over water.

SECTION - B (40 MARKS)

(Attempt any four questions from this section)

Question 3 **(3+3+2+2)**

I) An atom E with atomic number12 combines with an element F with atomic no 17.

a. The period to which E belongs.

b. The formula of the compound formed between E and F.

c. State the type of chemical bond formed in the above compound.

ii) Write balanced chemical equations for the following.

a. Reaction of dil.hydrochloric acid with potassium

sulphite.

b. Reaction between sodium hydroxide and nitric acid.

c. Reaction of excess ammonia with chlorine.

iii) Solutions P,Q,R have pH value 8, 12and 1.8 respectively. Which solution

a. is a strong acid.

b. will produce ammonia from an ammonium salt on heating.

iv) Anju passed ammonia gas through a black coloured metallic oxide 'M' and she observed a reddish brown solid 'N' after the reaction.

a. Identify M and N.

b. Which property of ammonia is shown in the above reaction?

Question 4 **(3+3+4)**

I) Name the gas produced during each of the following reactions.

a. Dil.hydrochloric acid reacts with calcium carbonate.

b. Dil. H_2SO_4 reacts with zinc sulphide.

c. Ammonia burns in oxygen.

II) Justify the following statements.

a. Alkali metals are good reducing agents.

b. Electron affinity of noble gas elements is zero.

c. Atomic size decreases along a period.

III) Draw the electron dot diagram of

a) Calcium oxide

b) Methane

Question 5 **(3+3+4)**

I Arrange the elements according to the instructions given.

a. Li, O, C, Be, F (increasing order of non- metallic

character)

b. Cl, F, I, Br (order of ease of formation of ions)

c. Cs, Na, Li, K, Rb (decreasing order of metallic character)

II) Give one significant observation when.

a. A solution of silver nitrate solution is added to dil. hydrochloric acid followed by ammonium hydroxide solution.

b. Ammonia reacts with hydrogen chloride.

c. Few drops of phenolphthalein is added to an acidic solution.

III) Following questions are related to the laboratory preparation of hydrogen chloride gas.

a. Name the acid used? Why is this particular acid preferred to other acids

b. Give a balanced equation for the reaction.

c. Name the salt formed when the temperature is maintained above the suitable condition.

Question 6 **(3+3+4)**

I) From the list given substances Na_2O,NH_3, CCl_4, ZnO, choose the substance that most appropriately fits the description given below:-

a. A non polar covalent compound.

b. The substance that forms strong alkali with water.

c. The compound which reacts with acid as well as base to form salt and water.

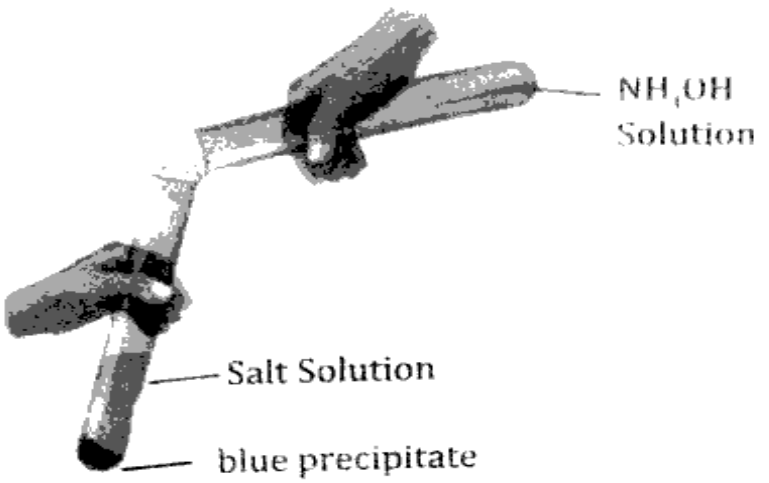
ii) Identify the type of bonding in

a. NaCl b. Co_2

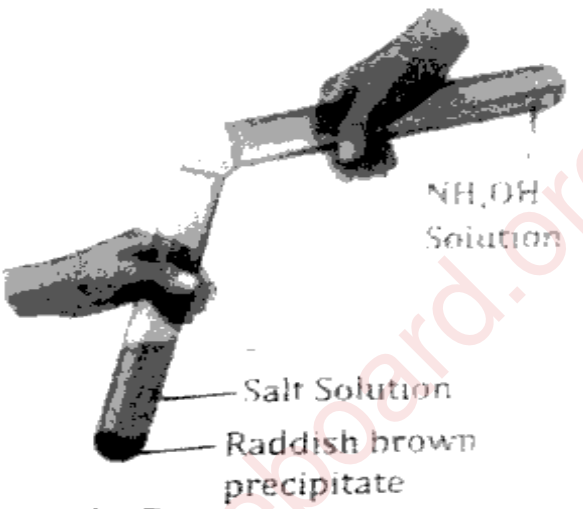
c. N_2

iii. Ram took two different salt solutions in test tubes A and B as shown in the figure. He added ammonium hydroxide

solution drop by drop to each of the test tube. A blue ppt is formed in test tube A and a reddish brown ppt is formed in test tube B.



Test Tube A



Test Tube B

State

a. The metal ion in the salt solutions taken in test tube A and B.

b. The observation made by him on addition of excess NH_4OH solution to the precipitate formed in I) test tube A II)test tube B.

Q7. I) Study the table given below. Use only the letters given in the table to answer the questions. Do not identify the elements. (3+2+2+2)

IA	IIA	IIIA	IVA	VA	VIA	VIIA	VIIIA
P		D		A		B	E
Q		M				C	
R						D	F

a) The element with highest electro negativity

b) Number of shells in element F

c) Formula of the compound formed between Q and C

ii. a. Name the catalyst used in catalytic oxidation of

ammonia.

b. What do you observe in the above reaction

c. Write equation for the reaction

iii. Name the following

a. An alkaline earth metal which obtains the same electronic configuration of neon to attain stability

b. The bond formed between two atoms with same electronegativity.

iv a. Anion is ----(larger/smaller) than the parent atom.

b. Nuclear charge remains same as we move down in a group. Is it true or false

Q8. i.

a. The special arrangement used to dissolve hydrogen chloride gas to produce hydrochloric acid. (3+3+2+2)

b. Why is this arrangement used? Give two reasons.

ii.

a. Define normal salt

b. How many types of salts are formed from sulphuric acid.

c. Universal indicator imparts_____colour to a neutral solution

iii. Give reason

a. Covalent compounds do not conduct electric current

b. Hydrogen chloride gas fumes in moist air.

iv. Complete and balance the following equations

a. $CaCO_3 + HCl \rightarrow$

b. $ZnSO_4 + NaOH \rightarrow$