9th Chemistry Guess Paper 2025

These guess papers are prepared according to the new paper pattern 2025 issued by the board and based on SLOs.

Your exam paper will be divided as follows:

- **25% Conceptual**
- **75% Knowledge-Based**
- **25% Analytical + Application-Based**

S.No	Most Important Short Questions (Chapter # 1)
1	Define Avogadro's Number.
2	Define industrial chemistry and analytical chemistry.
3	What is meant by mole?
4	Define radical and give an example.
5	Define Gram Formula Mass with one example.
6	What is Avogadro's Number? Give an example.
7	What is the significance of writing an element in a symbol?
8	Define empirical formula with an example.
9	Write the scope of biochemistry.
10	How will you differentiate between Organic and Inorganic Chemistry?
11	What is relative atomic mass?
12	Why are they considered as elements, whereas water as a compound?
13	What is gram molecular mass?
14	Differentiate between physical and chemical properties.
15	Define industrial chemistry and analytical chemistry.
16	Explain why hydrogen and oxygen are considered as elements, whereas water as a compound? Write two properties of each.
17	Differentiate between Ion and Free Radical.
18	Define formula unit and give an example.
19	Differentiate between Organic and Inorganic chemistry with a suitable example.
20	State the reason: "Soft drink is a mixture."
21	Define atomic mass unit. Why is it needed?
22	How many moles are in 18g of water?
23	Define free radical, how is it represented?
24	What is meant by diatomic molecule and triatomic molecule?
25	Distinguish between atom and molecule.
26	How does a homogeneous mixture differ from a heterogeneous mixture?
27	Calculate the molecular mass of H_2O.
28	Write down the names of two elements which are found in liquid form.
29	Give the scope of Biochemistry.
	Define environmental chemistry.

	Define Inorganic chemistry.
	What is radical? Give one example.

S.No	Most Important Short Questions (Chapter # 2)
1	How many protons and neutrons are present in an phosphorus atom?
2	Define isotopes. Write the isotopes of hydrogen.
3	How many maximum electrons can be accommodated in K, L, M, and N shells?
4	Give two examples of isotopes.
5	Write two defects of Rutherford's Model.
6	Draw the electronic configuration of "Mg" with the help of a shell.
7	Write the electronic configuration of Aluminum (Al-13).
8	What is meant by "Pudding" theory?
9	Write two observations about the Atomic Model of Rutherford.
10	What is the nature of charge on cathode rays?
11	Write electronic configuration of argon. (Ar=18)
12	How many protons and neutrons are present in Chlorine Atom (Cl-37)?
13	Define electronic configuration.
14	How many electrons can be accommodated in 'K' and 'L' shells? Give an example.
15	Write the names of two isotopes of hydrogen with their symbols.
16	Has Goiter, how will it be diagnosed?
17	Write two properties of neutron.
18	What will be the nature of charge on an atom when it loses or gains electrons?
19	Differentiate between shell and subshell.
20	Write electronic configuration of Cl-ion?
21	Name two radio isotopes used for the treatment of cancer.
22	Give two properties of positive rays.
23	Write down the electronic configuration of Cl^{1-}.
24	Give two properties of positive rays.
25	Write electronic configuration of Clion.
26	Write down configuration of Cl
27	Name two radio isotopes used for treatement of cancer.

S.No	Most Important Short Questions (Chapter # 3)
1	How did Newlands arrange the elements?
2	Write names of elements present in the 4th and 6th periods.
3	What is the trend of ionization energy in a period and why?
4	Why atomic radius increases down the group in the periodic table?
5	What are Transition metals?
6	Which are the normal periods of the modern periodic table? How much elements each has?
7	Write the trend of electronegativity in a period and a group.
8	Define ionization energy and write its unit.
9	How elements are arranged in periods?
10	Why the noble gases are non-reactive?
11	Define atomic radius and write its unit.
12	What is meant by atomic radius? Write down its unit.
13	How many groups and periods are in the modern periodic table?
14	Why electro negativity decreases down the group?
15	Define atomic radius.
16	What do you know about Dobereiner's triads?
17	Define duplet and octet rule.
18	Why ice floats over water?
19	Which periods are considered as normal periods?
20	What is Modern Periodic Law?
21	What is Mendeleev's Periodic Law?
22	Define Mendeleev's law.
23	Why the noble gases are non-reactive?
24	Define shielding effect.
25	What is the trend of atomic size in periods and group?
26	Define periodic function.
27	Why atomic number is a more fundamental property than atomic mass?
28	Define electronegativity.
29	Why the size of atoms increases in a group from top to bottom?
30	Define effective nuclear charge.
31	What is meant by first ionization energy?
32	Why is the second ionization energy of an element higher than the first one?
33	Define electron affinity.
34	Write names of elements of the first period.
35	Describe Mendeleev's periodic law.
36	What is meant by groups and periods in the periodic table?
37	Write the trend of ionization energy in the periodic table.
38	What is the trend of electronegativity in a period and a group?
39	Name the blocks in which elements are grouped in the periodic table.
40	What is the trend of electronegativity in a group from top to bottom?
41	How many elements are present in periods of the modern periodic table?
42	Define Dobereiner's Triads.

43	What is effective nuclear charge?
44	Write down the name of elements of a group (any two).
45	Define electronegativity. Which one halogen has the highest electronegativity value?
46	Why does the shielding effect increase down a group?
47	Write two salient features of the long form of the periodic table.
48	What is the contribution of Dobereiner towards the classification of elements?
49	From which element do the lanthanides series and actinides series start?
50	Write the trend of the shielding effect in a period and a group.
51	Write the difference between periods and groups.
52	State the modern periodic law.

S.No	Most Important Short Questions (Chapter # 4)
1	Define the duplet rule.
2	Why does chlorine accept only one electron?
3	What is meant by van der Waals forces?
4	Write the difference between a lone pair and a bond pair.
5	Why does ice float on water?
6	Define a metallic bond.
7	Describe at least two necessary conditions for the formation of a covalent bond.
8	Define a single covalent bond.
9	Why does a covalent bond become polar?
10	What is meant by a polar covalent bond?
11	Define a chemical bond.
12	Why does sodium form a chemical bond with chlorine?
13	What are intermolecular forces?
14	Write down the ways by which an atom can accommodate eight (8) electrons in its valence shell.
15	Differentiate between polar and non-polar covalent compounds.
16	What is meant by triple covalent bonds?
17	How does hydrogen bonding affect the physical properties of molecules?
18	Define a non-polar covalent bond and give an example.
19	Write any two properties of ionic compounds.
20	Why do atoms react with each other?

S.No	Most Important Short Questions (Chapter # 5)
1	Define Crystalline solid and give an example.
2	Why does ice float over water?
3	Differentiate between vapor pressure and condensation.
4	Define diffusion of gases and give an example.
5	What is meant by temperature?
6	Define standard atmospheric pressure. Write one of its units.
7	Why do some compounds have high melting and boiling points?
8	Define equilibrium.
9	What is the relationship between Evaporation and Boiling Point of Liquid?
10	Differentiate between crystalline and amorphous solids.
11	What is meant by standard temperature?
12	Define Freezing Point.
13	Why water has higher boiling point than alcohol?
14	How is evaporation affected by intermolecular forces?
15	Define entropy with its unit.
16	Why are the densities of gases lower than those of solids?
17	Define evaporation.
18	What is transition temperature?
19	Which form does element exist at 100°C?
20	Define standard atmospheric pressure. What are its units?
21	What is the effect of surface area on evaporation?
22	Why are gases compressible?
23	What do you mean by Pascal's law? How many Pascals are equal to 1 atm?
24	Define standard atmospheric pressure and explain with an example.
25	Write the density of oxygen gas at 0°C and at 20°C at normal atmospheric pressure.
26	What is meant by Absolute Zero?
27	What is effusion? Explain with an example.
28	How is Vapour Pressure affected by the nature of liquid?

S.No	Most Important Short Questions (Chapter # 6)
1	Define colloidal solution. Also, give an example.
2	Write two properties of a solution.
3	Differentiate between dilute and concentrated solution.
4	What is meant by mass percentage?
5	Define solubility.
6	What is meant by Super Saturated Solution?
7	Define Molarity and write its formula.
8	Differentiate between solute and solvent.
9	Why do suspensions not form a homogeneous mixture?

10	Which solution is more concentrated? One molar or three molar?
11	Define Volume (%) percentage unit.
12	What is Tyndall Effect?
13	Why do we stir paints thoroughly before using?
14	Define saturated solution.
15	Write the names of any two factors which affect solubility.
16	Differentiate between solute and suspension.
17	What is the difference between dilute solution and concentrated solution?
18	Define solution. Give one example.
19	Why do colloids show the Tyndall effect?
20	What do you mean by "Like can dissolve like"?
21	Define solvent with an example.
22	How is the dilution of a solution proceeded?
23	Write down names of any two factors that affect the solubility of solutes.
24	How can you distinguish between pure liquid and solution?
25	Define unsaturated solution.
26	What do you mean by Volume / Volume %?
27	Why are colloids quite stable?
28	Why is iodine soluble in CCl4 and not in water?
29	Define solution. Give an example.
30	How is a molar solution prepared?
31	Define Molarity and write its formula.
32	Give an example for "Gas in Solid" solution.
33	Describe the effect of temperature on solubility.
34	Why are solutions called mixtures?
35	What is meant by V/m-%?

S.No	**Most Important Short Questions (Chapter # 7)**
1	What is meant by reducing agent?
2	Find the oxidation number of nitrogen when the oxidation numbers of H = +1 and O = -2 in HNO_3.
3	State the best method for the protection of metal from corrosion.
4	Why is an iron grill painted frequently?
5	Write down two uses of silver.
6	Explain electroplating along with an equation.
7	What is the difference between valency and oxidation state?
8	Define Redox Reaction.
9	What is in coating done?
10	Define electroplating.

11	Define the electrochemical cell.
12	What is the difference between cathode and anode?
13	Write the difference between anode and cathode.
14	Define oxidation in terms of electrons.
15	In the electrolysis of silver, from where do silver ions come?
16	Define non-electrolytes and give an example.
17	Define alloy with the help of an example.
18	Write the difference between spontaneous and non-spontaneous reactions.
19	Define ionization about NaOH solution. Why is it an electrolyte?
20	What is stainless steel?
21	Define electrochemistry.
22	Define oxidation and reduction.
23	What is meant by an oxidizing agent?
24	Write any two rules for assigning oxidation numbers.
25	Differentiate between oxidation and reduction.
26	What is the difference between corrosion and rusting?
27	Define electrolytes and non-electrolytes.
28	Why is oxygen necessary for rusting?
29	Define oxidation in terms of electrons with an example.
30	Define oxidation numbers.
31	How would you define an oxidizing agent with an example?
32	What is corrosion? Give its example.
33	Define rusting. Write its important condition.
34	Differentiate between strong electrolytes and weak electrolytes.
35	What is the advantage of galvanizing?
36	Write two methods for the prevention of corrosion.
37	Define strong electrolytes.
38	How does electroplating of tin take place?
39	Write the important condition of rusting.
40	Calculate the oxidation number of nitrogen in HNO.
41	What do you mean by galvanizing? Write its advantages.
42	Does aluminium rust?
43	Define weak electrolytes.
44	Write the redox reactions involved in the electrolytic refining of copper.
45	What is the basic function of a salt bridge?
46	Differentiate between corrosion and rusting.
47	Define galvanizing and write its advantages.
48	What are electrolytes? Write an example.
49	What are weak electrolytes? Give at least one example.

S.No	Most Important Short Questions (Chapter # 8)
1	What is the nature of metal oxide?
2	State two physical characteristics of metals.
3	Write the trend of non-metallic character in a group and period.
4	What is meant by metallic character?
5	Name any two very reactive metals.
6	What is the trend of electropositivity in the periodic table?
7	How are non-metals essential for the existence of life?
8	Give the trend of electropositivity in a group and period.
9	Write down the chemical reaction of Na with O_2.
10	Why does the reactivity of metals increase down the group?
11	Write down the chemical reaction of Mg with O_2.
12	Write any two uses of magnesium.
13	Write the reaction of fluorine with water.
14	What do you mean by malleable and ductile?
15	Write two uses of calcium metal.
16	Name any four noble metals.
17	What is meant by 24 carat gold?
18	Write down names of four very reactive metals.
19	Write down names of two least reactive metals.
20	Why does the electropositive character of metals decrease in a period?
21	What is the trend of electropositivity in a group?
22	Why is "Cu" used for making electrical wires?
23	Why is HF a weak acid?
24	Write any two uses of gold.
25	Define electropositive character.
26	Write the reaction of chlorine with methane in the presence of bright sunlight.
27	Write any two chemical properties of metals.
28	Why is platinum used for jewellery making?
29	Name four least reactive metals.
30	What do you mean by 22 carat gold?
31	Write two uses of calcium.
32	What are halogens? Give any one example.
33	Why is the valency of chlorine one?
34	Write physical properties of metals.
35	Name any metal.
36	Write the trend of electropositivity in a group.
37	Write two uses of silver.
38	Write any two chemical properties of non-metals.
39	What is the difference between alkali and alkaline earth metals?
40	Why does the second ionization energy of magnesium is higher than the first one?
41	What is meant by metallic character?
42	Define electropositivity.
43	What do you mean by 24 carat gold?

44	Write any two physical characteristics of metals.
45	Write the reaction between chlorine and hot concentrated NaOH.
46	Why does bromine exist in a liquid state in the halogen group?
47	Write two uses of sodium.
48	What is the trend of electropositivity in a group and a period?
49	How do non-metals are essential for the existence of life?
50	Why are silver and gold less reactive metals?
51	What is meant by the electropositivity of metals?
52	Write the chemical reaction of sodium hydroxide with one halogen.
53	How does oxygen react with elements of Group-I metals?
54	Write any two uses of platinum.

Most Important Long Questions

Question No. 5 (a+b)

S.No	Chapter # 1
1	Define element and its unique property "Valency". How does this valency become positive or negative?
2	Calculate the number of moles and number of molecules present in 6 grams of water.
3	Explain any five branches of chemistry.
4	Give any five differences between a compound and a mixture.
5	Define molecular ion. Write any four differences between a molecule and a molecular ion.
6	Define chemistry and explain any four of its branches in detail.
7	Define free radical and give differences between a molecule and a molecular ion.
8	Define molecular and empirical formulas with examples.
9	Narrate the properties of a molecular ion.
10	List five differences between a compound and a mixture.
11	Define chemical formula. How is a chemical formula written?
12	Define chemistry. Describe any four branches of chemistry.

S.No	Chapter # 4
1	Define an ionic bond and write properties of ionic compounds.
2	Define covalent compounds and write their four properties.
3	What is the octet rule? Why do atoms always struggle to attain the nearest noble gas electronic configuration?
4	Explain five major properties of metals.
5	Illustrate polar and non-polar covalent bonds.
6	Define a coordinate covalent bond and discuss the formation of NH_3.
7	Why do atoms form chemical bonds? Explain.
8	What is a coordinate covalent bond? Explain it with examples.
9	Define ionic compounds and write their three properties.
10	What are intermolecular forces? Compare these forces with chemical bond forces with reference to the HCl molecule.
11	Write down the properties of metals.
12	What is an ionic bond? Discuss the formation of an ionic bond between sodium and chlorine atoms.
13	Define hydrogen bonding. Explain how these forces affect the physical properties of compounds.
14	Describe types of covalent bonds.
15	Define dipole-dipole interaction and explain it with an example.
16	What is meant by bonding electrons? Explain the formation of bonds in CH_4 and CH_3 molecules.
17	What is a metallic bond? Explain the metallic bond with the help of a diagram.
18	What is an ionic bond? Discuss the formation of an ionic bond between sodium and chlorine atoms.

Question No. 6 (a+b)

S.No	Chapter # 2
1	Describe Rutherford's gold foil experiment with a diagram.
2	Write any four results of Rutherford's atomic model experiment.
3	How were cathode rays discovered?
4	Write any four postulates of Bohr's atomic theory.
5	How many isotopes of hydrogen are there? How are they used in power generation?
6	What are isotopes? Describe the isotopes of hydrogen, carbon, and chlorine.
7	Write any two results of Rutherford's experiment and two defects of Rutherford's atomic model.
8	Write down any four properties of cathode rays.
9	Describe four properties of canal rays.
10	Write down four properties of canal rays.
11	What is an isotope? Write its three uses.

12	Draw a labeled diagram to show the presence of protons in the discharge tube and explain how canal rays were produced.

S.No	Chapter # 5
1	Explain the factors that influence diffusion in liquids.
2	Define boiling point and explain how it is affected by different factors.
3	What is vapor pressure? How is it affected by intermolecular forces?
4	State Boyle's law and explain it mathematically.
5	Define evaporation and explain various factors affecting it.
6	State Charle's Law and describe its mathematical expression.
7	What is meant by diffusion? Describe three factors that influence diffusion in liquids.
8	How does the boiling point of a liquid depend on the nature of the liquid and intermolecular forces?
9	Write the experimental verification of Boyle's law.
10	Differentiate between crystalline and amorphous solids.
11	Define Charle's Law and prove it mathematically.
12	What is meant by vapor pressure? Write down its three factors.

Question No. 7 (a+b)

S.No	Chapter # 6
1	Describe any four characteristics of colloids.
2	Give four characteristics of suspension.
3	Define solubility. What is the general principle of solubility?
4	Discuss the effect of temperature on solubility.
5	Explain solubility and solute-solvent interaction with an example.
6	How much NaOH is required to prepare 500 mL of 0.4M solution?
7	Explain any four types of solutions with examples.
8	Define solubility. Describe the effect of temperature on solubility.
9	Explain any two methods used to determine solution concentration.
10	Define a saturated solution. How is a supersaturated solution prepared?
11	Define electrolysis. Explain electrolytic refining of copper with the help of a diagram.
12	Explain how dilute solutions are prepared from concentrated solutions.

13	Define concentration and explain four concentration units.
14	What is molarity? Write its formula and explain how a one molar solution of sodium hydroxide (NaOH) is prepared.
15	Define electroplating and write down the procedure of electroplating.
16	Differentiate between an unsaturated solution and a supersaturated solution using the example of sodium thiosulphate ($Na_2S_2O_3$).
17	Describe the factors affecting the solubility of solutes.

S.No	Chapter # 7
1	Explain oxidation and reduction in terms of loss and gain of electrons.
2	Discuss the electrolysis of water in detail.
3	Define electroplating. Describe the electroplating of silver.
4	Describe the process of rusting of iron.
5	Explain oxidation and reduction reactions with the help of examples.
6	What is a galvanic cell? Write four differences between electrolytic and galvanic cells.
7	Describe four characteristics of colloids.
8	Find out the oxidation numbers of $K_2Cr_2O_7$ and HNO_3.
9	Describe the rules for assigning oxidation states.
10	Discuss the redox reaction taking place in the rusting of iron in detail.
11	Explain the electroplating of silver with the help of a diagram.
12	Write down the construction and working of Nelson's cell in detail.
13	State the working and construction of a Daniel Cell.
14	What is electrolysis? Explain the electrolysis of water.
15	Define the corrosion. How corrosion is prevented with the Zinc coating
16	What is the principle of electroplating? How is electroplating of chromium carried out?
17	Define oxidation state. Write any three rules for assigning oxidation numbers.