

SAMAGRA SHIKSHA, KERALA
TERMINAL EVALUATION 2022-'23
CHEMISTRY

Standard: IX

Time : 1½ Hours
Total Score : 40**Instructions**

- The first 15 minutes is cool off time. You may use the time to read and plan your answers.
- Answer the questions only after reading the instructions and questions thoroughly.
- Score and time are to be considered while answering.

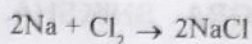
Answer any FOUR questions from 1 to 5. Each question carries 1 score. (4 x 1 = 4)

1. Which shell among the following has the highest energy? (1)
(K, L, M, N)
2. How are the atoms called after they get charge? (1)
3. Name of the scientist who suggested the planetary model of atom is (1)
4. Find out the relationship and fill up.
Laws of electrolysis : Michael Faraday
Law of Conservation of mass : (1)
5. The isotope of hydrogen used in nuclear reactors is (1)

Answer any FOUR questions from 6 to 10. Each question carries 2 scores. (4 x 2 = 8)

6. Some statements regarding atom are given below. Find the correct statements (2)
 - a) In an atom number of protons and electrons are not equal.
 - b) Atom is the smallest particle that can take part in a chemical reaction.
 - c) Atoms of different elements have same atomic number.
 - d) In an atom the entire mass is concentrated at its nucleus.
7. The element 'X' forms a diatomic molecule with double bond.
 - a) How many electrons are there in the outer most shell of 'X'? (1)
 - b) How many pairs of electrons are shared for this bond formation? (1)

8. Analyse the equation given below and answer the following questions



[Hint :- Electronic Configuration Na = 2, 8, 1; Cl = 2, 8, 7]

- a) Which atom gets oxidised here? (1)
 b) Write the equation for reduction in this reaction? (1)
9. Choose the correct answer for the following questions from the options given in the box.

J.J.Thomson, Rutherford, Chargeless,
 Positive Charge, Negative Charge, Chadwick

- a) Name the scientist who discovered neutron. (1)
 b) What is the charge of an electron? (1)
10. Some elements and their electronic configuration are given below.

(Symbols are not real)

Element	Electronic Configuration
A	2, 8, 7
B	2, 6
C	2, 8, 2
D	2, 5

- a) Which among the elements show same valency? (1)
 b) Write the chemical formula of the compound formed by the combination of C and A. (1)

Answer any FOUR questions from 11 to 15. Each question carries 3 scores. (4 x 3 = 12)

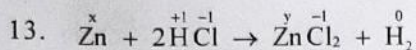
11. Symbol of an atom is given ${}_{11}^{23}\text{Na}$
- a) Find the number of protons and neutrons in this atom? (2)
 b) How many shells are occupied by electrons in this atom? (1)
12. Electronegativity values of some elements are given. Analyse these values and answer the following questions.

[Electro negativity of S = 2.58, O = 3.44, Ca = 1.0, F = 3.98]

- a) Complete the table (2)

Compound	Type of bond
SO ₂ A
CaF ₂ B

- b) Justify your answer. (1)



Analyse the chemical equation and answer the following questions.

[Hint : x and y are the oxidation numbers of Zn]

- Find x and y (1)
- Oxidation number of which atom is increased? (1)
- Which is the reducing agent in this reaction? (1)

14. Carbon combines with chlorine to form a compound carbon tetrachloride.

[Hint : Atomic Number : C = 6, Cl = 17]

- How many electrons are required to complete the octet of carbon atom? (1)
- How many atoms of chlorine should combine with a carbon atom to complete the octet? (1)
- Which type of covalent bond is present in carbon tetrachloride? (1)
(Single bond, Double bond, Triple bond)

15. Some elements and their electronic configurations are given below.

(Symbols are not real)

Element	Electronic Configuration
A	2, 6
B	2, 8, 7
C	2, 8
D	2, 8, 1

- Among these elements, which has the highest stability? Give reason? (2)
- Which among these can form cation during chemical bonding? (1)

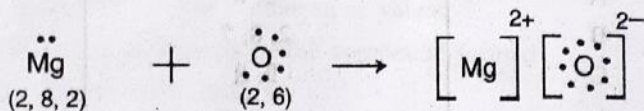
Answer any FOUR questions from 16 to 20. Each question carries 4 scores. (4 x 4 = 16)

16. Three isotopes of carbon are C - 12, C - 13, C - 14

[Hint : Atomic Number of C = 6]

- Find out the number of protons in each of the above isotopes? (1)
- Which is the particle that differ in its number in isotopes? (1)
- How many neutrons are there in C - 13 isotope? (1)
- Which isotope of carbon is used to determine the age of fossils? (1)

17. Electronic configuration of Nitrogen is 2, 5
- Draw the electron dot diagram of the bond formation in Nitrogen molecule. (2)
 - How many pairs of electrons are shared here? (1)
 - Nitrogen (N_2) molecule doesn't show polar nature. Why? (1)
18. An unbalanced chemical equation is given.
- $$N_2 + H_2 \rightarrow NH_3$$
- Which are the reactants in this reaction? (1)
 - Balance the above chemical equation. (1)
 - What is the total number of product molecules in the balanced chemical equation. (1)
 - Identify the compound in this equation? (1)
19. Mass number of an atom is 35. There are three shells in this atom. The outermost shell of this atom contain 7 electrons.
- Write the electronic configuration of this atom. (1)
 - What is its atomic number? (1)
 - Draw the Bohr model of this atom. (2)
20. Electron dot diagram of magnesium oxide is given below.



- Which atom accepts electron? (1)
- Write the equation showing the formation of Mg^{2+} ion. (1)
- Name the anion present in it. (1)
- Write the electronic configuration of Mg^{2+} ion. (1)