

FIRST TERMINAL EXAMINATION 2025-26
CHEMISTRY

Std: IX

Max Score: 40

Time: 1½ Hours

Instructions

- First fifteen minutes are cool off time. Read the questions carefully during this time.
- Write the answers according to the instructions.
- Consider the score while writing the answers.
- Answer only one question for questions having choice.

Answer all the questions from 1 to 4. Each question carries 1 score. (4 x 1 =4)

1. The whole positive charge and mass of an atom are concentrated in
(protons, neutrons, nucleus, orbits)

2. Some statements are given.

- i) There are three isotopes for hydrogen.
- ii) Heavy water is the oxide of tritium
- iii) C-13 is the most stable and abundant isotope of carbon.
- iv) C-14 is a radioactive isotope

The correct statements are

- A) i & ii
- B) ii & iii
- C) i & iv
- D) iii & iv

3. Match the following.

A	B
i) Electron	a) James Chadwick
ii) Neutron	b) Ernest Rutherford
iii) Proton	c) J J Thomson

- A) i-a, ii-b, iii-c
- B) i-c, ii-a, iii-b
- C) i-b, ii-c, iii-a
- D) i-b, ii-a, iii-c

4. Statement 1 : An oxygen atom accepts an electron and becomes O^- ion.
Statement 2 : Energy is absorbed during this process.

Which of the following is correct regarding the above statements?

- A) Both statements 1 and 2 are correct.
- B) Statement 1 is incorrect, Statement 2 is correct.
- C) Statement 1 is correct, Statement 2 is incorrect.
- D) Both statements 1 and 2 are incorrect.

Two questions from 5 to 11 have choice. Each question carries 2 scores. (7x 2 =14)

5. The atomic number of chlorine is 17.
a) How does a chlorine atom become a chloride ion?
b) Draw the figure showing the formation of chloride ion.
6. a) State modern periodic law.
b) How many groups and periods are there in modern periodic table?
7. (A) An element belongs to 2nd period and 17th group.
a) Write its electron configuration.
b) Write the electron configuration of the element in the same group which belongs to third period.

OR

- (B) The atom of an element has 3 shells and there are 7 electrons in its outermost shell.
a) Write its group number and period number.
b) Write the electron configuration of element which belongs to the 14th group in the same period.
8. The observations of discharge tube experiments are given. Write down the inferences drawn from each observation.
a) Cathode rays cast shadows of opaque objects placed in its path.
b) When an electric field is applied on both sides of the cathode rays, they are found to be attracted towards the positive side.
9. The electron configurations of two elements A and B are given. (Symbols are not real)
A - 2,5
B - 2, 8, 5
a) Which of these elements has smaller atom?
b) What are the two important factors that influence atomic size?
10. Write any two postulates of Rutherford model of atom.
- 11.(A) a) Who proposed plum pudding model of atom?
b) According to this model, an atom is electrically neutral. Why?

OR

- (B) a) In gold foil experiment most of the alpha particles passed through the gold foil. What does this indicate?
b) Write the name of the atom model proposed by Rutherford.

Two questions from 12 to 17 have choice. Each question carries 3 scores. (6x 3 =18)

12. Noble gases except Helium have octet electron configuration.

- a) What is meant by octet electron configuration?
- b) Magnesium and oxygen combines to form magnesium oxide. What change occurs to the electron configuration of magnesium in the chemical reaction? Why?

13.(A) Draw the orbit electron configuration of the isotopes of hydrogen and write their names.

OR

(B) There are three isotopes for hydrogen.

- a) Which isotope of hydrogen has no neutrons in its nucleus?
 - b) Write the number of protons and neutrons in ${}^1\text{H}$ and ${}^3\text{H}$
14. Some elements that belong to the fourth period show similarities in properties along the period.
- a) By what name these elements are known as?
 - b) In which shell are the electrons added in this elements?
 - c) Why do they show similarities in properties along the period?
15. The isotope of an element is ${}^{13}\text{C}$. Another isotope has one neutron more than the given one.
- a) Represent the latter isotope indicating its atomic number and mass number.
 - b) Write any one use of these isotopes.
- 16.(A) The electron configurations of some elements are given. (Symbols are not real)

A - 2, 8, 3

B - 2, 8, 7

C - 2, 8, 9, 2

D - 2, 7

- a) Which among these belong to main group elements?
- b) Which among these is a transition element?
- c) Which among these show similarity in properties?

OR

(B) The position of some elements in the periodic table are given. (Symbols are not real)

A - 6th period, 1st group

B - 7th period

C - 4th period, 8th group

D - 3rd period, 17th group

- a) Which of these is a transition element?
 - b) Which of these is an alkali metal?
 - c) Which of these is a gaseous element?
17. An atom of element B has 13 positive charges in its nucleus. Its mass number is 27. This atom is electrically neutral. (symbol is not real)
- a) What is its atomic number?
 - b) Find the number of neutrons in its nucleus.
 - c) Represent the element indicating its atomic number and mass number.

Question 18 has choice. It carries 4 scores.

(1 x 4 =4)

18. Two elements X and Y have 2 and 7 electrons in their outermost shells respectively. They belong to the third period. (Symbols are not real)
- a. Find the groups to which X and Y belong.
 - b. Write the atomic number of the noble gas in the period to which X and Y belong.
 - c. Which element among X and Y has smaller atom? Give reason

OR

- (B) An element A belongs to 2nd period accepts two electrons to attain stability.
Another element B belongs to 3rd period accepts two electrons to attain stability.
(Symbols are not real).
- a) Write the electron configurations of A and B.
 - b) Find the group to which they belong.
 - c) Which among A and B has bigger atoms? Justify your answer.