Anshika
9R

SET -A

E 906–Ch

SAMAGRA SHIKSHA KERALA

Summative Assessment – Term I 2025-26

CHEMISTRY

Class : IX

Score 40
Time : 1 ½Hours

- *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. Find the relation and fill up suitably (1)

   Planetary model : Rutherford

   Plum Pudding Model : ..... J. J Thomson

2. A few statements are given (1)

   (i) Mendeleev arranged elements in the increasing order of atomic mass.
   (ii) Mendeleev designed periodic table on the basis of atomic number.
   (iii) Mosley designed periodic table on the basis of atomic number.
   (iv) There are 8 groups and 7 periods in the modern periodic table.

   Find the correct statements and choose the correct answer from the following.

   a) statements (i) and (ii) are correct
   b) only the statements (i) is correct
   c) statements (i) and (iii) are correct
   d) statements (i) and (iv) are correct

3. Match the following. (1)

A	B
(X) Neils Bohr	(p) Gold foil experiment
(Y) William Crookes	(q) Stationary energy levels
(Z) Rutherford	(r) Discharge tube experiment
	(s) Neutron

Choose the correct answer.

	X	Y	Z
a)	q	r	p
b)	q	r	s
c)	r	p	s
d)	p	s	r

4. Assertion (A) : The element sodium at the extreme left of the third period form an ionic compound with chlorine.

Reason(R): Electron gain enthalpy is high for 17^{th} group elements. (1)

a. A and R are correct, but R is not the correct explanation of A
b. A and R are correct, R is a correct explanation of A
c. A is correct, but R is not correct.
d. A is not correct but R is correct.

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

5. Magnesium is an alkaline earth metal.

a) How is magnesium ion formed? (1)

b) Write the chemical equation of its formation. (1)

6. (A). Electron configuration of four elements are given. (Symbols are not real)

P - 2,7 Q - 2,8,2, R - 2,1 S - 2,8,8,2

a) Which of these elements belong to the same group? (1)

b) Which of these elements belong to the same period? (1)

OR

B. Electron configuration of four elements are given. (Symbols are not real)

A- 2,8,8 B- 2,8,1, C- 2,8,8,1 D- 2,5

a) Which among these is a noble gas? (1)

b) Which is the 15^{th} group element? (1)

7. Complete the table (2)

Isotope	Use
a) Cobalt-60	a).....
b)	To diagnose anaemia

8. A. On the basis of discharge tube experiment, how did J.J Thomson prove the following.?

a) Cathode rays have mass. (1)

b) Cathode rays have negative charge. (1)

OR

B. On the basis of discharge tube experiment, how did J.J Thomson prove the following?

a) Particles in the cathode rays are present in all substances. (1)

b) Cathode rays travel in straight lines. (1)

9. The atom of element X has electrons in 3 shells . The number of valence electrons is 6.

a) Write the electron configuration of this element. (1)

b) To which family of elements does it belong? (1)

10. Symbols of some elements are given.

$^{16}_{8}O$, $^{40}_{19}K$, $^{17}_{8}O$, $^{40}_{20}Ca$, $^{24}_{12}Mg$,

a) Select the pair of isobars. (1)

b) Write the reason for selecting this pair. (1)

11. The element Q belongs to the third period and thirteenth group of the periodic table.

a) Write the electron configuration of the noble gas in the same period. (1)

b) Write the atomic number of the element in the second period and that belongs to the same group as that of Q. (1)

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

12. Write any three main postulates of Rutherford's model of atom. (3)

13. In scandium, last electron is added to penultimate shell and its electron configuration is 2,8,9,2.

a) Write the electron configuration of the element that comes just before scandium and the element that comes after scandium. (2)

b) Find the group number of scandium on the basis of electron configuration of the element that comes just before scandium. (1)

14. A. a) Why do transition elements show similarity in groups and periods? (1)

b) Give examples for two transition elements that we use in our daily life? (2)

OR

B. a) In which groups are the main groups elements included ? (1)

b) Write one example each for the following from main group elements.

(i) Exists in solid state at room temperature. (1)

(ii) Exists in liquid state at room temperature. (1)

15. Atomic number of some elements are given below. (Symbols are not real)

A- 12, B-15, C-17

a) Arrange them in the increasing order of the size of atom. (1)

b) Justify your answer. (1)

c) How does the size of atom change on moving down the group? Give reason. (1)

16. CaO is an ionic compound. Atomic number of calcium is 20 and that of oxygen is 8.

a) Write the chemical equation for the formation of oxide ion. (1)

b) Identify the noble gas having the same electron configuration as that of oxide ion. (1)

c) How many electrons and protons are present in calcium ion? (1)

17. A. Atomic number of an element is 16.

a) In how many shells are electrons distributed? (1)

b) Among these shells which has the highest energy? Give reason. (2)

OR

B. Atomic number of an element is 15.

a) Which is the valence shell of this atom. ? (1)

b) Which shell has the least energy in this atom? Give reason. (2)

Question 18 has one choice. It carries 4 scores **(1 x 4 = 4)**

18. A. Data of some elements X, Y and Z are given. (Symbols are not real)

X – Belongs to 3rd period and it needs 1 more electron to attain octet electron configuration.

Y – Belongs to 4th period. It is not a transition element. The shell with highest energy contains 1 electron.

Z – Belongs to 1st period and has the same number of valence electrons as that of Y.

a) Write the electron configuration of X and Y. (2)

b) Identify the element Z from the periodic table. (1)

c) Which is the isotope of Z having no neutron ? (1)

OR

B. Data of some elements P,Q and R are given. (Symbols are not real)

P – Belongs to 3rd period. It contains 4 electrons more than that of neon.

Q – Group number is 13 and its penultimate shell is K shell.

R– Belongs to 2nd period and in the same group of P.

a) Write the electron configuration of P and Q. (2)

b) Identify the element R in the periodic table. (1)

c) Write the symbol of the radioactive isotope of R. (1)