SET A

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E 906-Ch

SECOND TERMINAL EVALUATION 2023-24

CHEMISTRY

Class: IX

Score : 40
Time : 1 ½Hours

Instructions

- First 15 minutes is given as cool offtime. This time is to be spent for reading and understanding the questions.
- Answer the questions according to the directions.
- Score and time are to be considered while answering.

Answer any 4 questions from 1 to 5. Each carries 1 Score. **(4 x 1 = 4)**

1. Find the odd one out. (1)

   [Ar, Ne, Kr, He]

2. Analyse the following statements and choose the correct one from a,b,c,d (1)

   i) Atom is the smallest particle that can take part in chemical reaction.

   ii) Atoms of different elements have identical properties.

   iii) Atoms cannot be divided during chemical reactions.

   a) Only statement (i) is true. b) Statements (i) and (iii) are true.

   c) Only statement (iii) is true. d) All statements are true.

3. Which among the following oxides has no acidic property? (1)

   [NO_2, CO_2, H_2O, SO_2]

4. Find the relationship and fill suitably

   Sodium : Metal

   Germanium : ..... (1)

5. Oxidation refers to reaction involving

   a) Loss of proton b) Gain of electron

   c) Loss of electron d) Gain of proton (1)

Answer any 4 questions from 6 to 10. Each carries 2 Scores. **(4 x 2 = 8)**

6. Lanthanoids and Actinoids belong to the 6^{th} and 7^{th} periods respectively of the periodic table

   a) These elements are together known as .....

   (Representative elements, Transition elements, Inner transition elements) (1)

   b) Which of them is known as rare earths ? (1)

7. Mass number of an atom is 31. There are 15 positively charged particles in its nucleus.

   a) Write the electronic configuration of this atom? (1)

   b) How many neutrons are there in this atom? (1)

8 $Mg + 2HCl \rightarrow MgCl_2 + H_2$

24g Mg completely reacts with 73g HCl to form 95g $MgCl_2$ and 'X' g H_2

   a) Find the value of X (1)

   b) To which law is it related ? (1)

9. Following elements are in the same period of periodic table.

$_{13}Al$, $_{14}Si$, $_{15}P$, $_{16}S$

a) Which among them belongs to Carbon family? (1)

b) What is the atomic number of the inert gas in this period? (1)

10. Following equations show the ionisation of H_2SO_4

$$H_2SO_4 \rightarrow H^+ + X$$

$$X \rightarrow H^+ + Y$$

a) Find X and Y (1)

b) Write the name of another acid having same basicity as that of H_2SO_4. (1)

Answer any 4 questions from 11 to 15. Each carries 3 Scores. **(4 x 3 = 12)**

11. Sodium oxide dissolves in water to form Caustic soda.

a) Write the chemical name of Caustic soda? (1)

b) What is the colour change observed when red litmus paper is dipped in Caustic soda.Give reason. (2)

12. Ionisation energies of some elements of same period of the periodic table are given below. One of them is a noble gas. (Hint :- (i) symbols are not real. (ii) kJ/Mole is the unit of ionisation energy)

A = 525 kJ/Mole

B = 2375 kJ/Mole

C = 1025 kJ/Mole

D = 735 kJ/Mole

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

b) Identify the highly reactive metal. (1)

c) Which among these has the highest atomic size? (1)

13. $\overset{0}{Fe} + 2\overset{+1\ -1}{HCl} \rightarrow \overset{x\ -1}{FeCl_2} + \overset{0}{H_2}$

a) Find the Oxidation state of Fe in $FeCl_2$ (1)

b) Is this a redox reaction? Justify your answer. (2)

14. MgF_2 is an Ionic compound.[Hint: Atomic number of Mg = 12, F= 9]

a) Which is the cation present in MgF_2? (1)

b) Write the electronic configuration of anion in this compound. (1)

c) Write one property of Ionic compounds. (1)

15. Analyse the given electron dot diagram and answer the following questions.

a) Which type of chemical bond is represented here? (1)

b) What is the valency of Chlorine in this compound? (1)

c) Write the chemical formula of Aluminium chloride (Hint : Valency of Aluminium = 3) (1)

Answer any 4 questions from 16 to 20. Each carries 4 Scores. **(4 x 4 = 16)**

16. Analyse the given equation and complete the table (4)
(Hint : Atomic number Mg = 12, Cl = 17)

$$Mg + Cl_2 \rightarrow MgCl_2$$

a) Oxidised atom .....
b) Oxidising agent .....
c) Equation of reduction .....
d) Equation of oxidation .....

17. Equation of a reaction is given below.

$$NaOH + HCl \rightarrow NaCl + H_2O$$

a) What is the common name of this type of reactions? (1)

b) Which is the salt formed here? (1)

c) What is the nature of solution of this salt?
(Acidic, Basic, Neutral) (1)

d) Write any one situation in daily life where this type of reaction is used (1)

18. Some materials available in laboratory are given.

Mg ribbon, Marble powder, Marble piece, dil.HCl, con.HCl

a) Which materials will you choose for the preparation of maximum amount of CO_2 in minimum time? Justify your answer. (2)

b) Write the balanced chemical equation of this reaction. (1)

c) Write another method to increase the rate of this reaction. (1)

19. Match the following (4)

A	B	C
Lavoiser	Increasing order of atomic number	Group of three elements
Dobereiner	Metals and Non metals	18 Groups and 7 periods
Mendeleev	Increasing order of atomic mass	Could not include metalloids
Moseley	Triads	Prediction of the properties of undiscovered elements