

SECOND TERM EVALUATION 2022
CHEMISTRY

Class: IX

Time: 1½hour

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 4 questions from 1 to 5. Each question carries one score. (4 x 1 = 4)

1. The common properties of acids is due to the presence of ions. (1)
2. Which among the following is the contribution of Newlands to the classification of elements ? (1)
(Triads, Law of Octaves, Modern periodic table)
3. The most electronegative element is (1)
(Chlorine, Fluorine, Helium, Sodium)
4. Name the type of medicine used for reducing acidity in stomach? (1)
5. Which substance is precipitated while Sodium thiosulphate reacts with Hydrochloric acid? (1)

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

6. Select the correct statements from the following.
 - a) Hydrogen is a gas which turns clear lime water milky.
 - b) SO_2 causes acid rain.
 - c) Metallic oxides usually show acidic character.
 - d) If the acidity of soil increases, we add basic substances. (2)
7. What happens to the size of atom while we go from left to right in a period? Explain the reason. (2)
8. Some substances are added to Hydrogen peroxide to increase or decrease its rate of decomposition.
 - a) What are these substances generally known as? (1)
 - b) Which substance is added to Hydrogen peroxide to reduce its rate of decomposition? (1)

9. a) Write the electronic configuration of ${}^{20}_{10}\text{Ne}$ and find its group number. (1)
 b) Does this element generally take part in chemical reactions? Why? (1)
10. HNO_3 is the chemical formula of Nitric acid.
 a) Write the ionisation equation of Nitric acid. (1)
 b) What is the basicity of this acid? (1)

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

11. Match the following. (3)

Name of salt	Chemical formula	Use
Washing soda	Sodium chloride	Fungicide
Blue vitriol	Sodium carbonate	Making of freezing mixture
Common salt	Copper sulphate	Manufacture of glass

12. Name of some scientists related to classification of elements are given in the box. Identify the names related to the statements given below.

Lavoisier, Dobereiner, Newlands, Mendeleev, Mosely

- a) The known 30 elements were classified into metals and non metals. (1)
 b) Columns were left vacant for elements which were not known at that time and their properties were predicted. (1)
 c) Serial numbers were given to the elements through X-ray diffraction experiments. (1)
13. Ionisation energy varies with the size of atoms.
 a) How does the size of an atom affect ionisation energy? (1)
 b) Write another factor which affects ionisation energy. (1)
 c) How does ionisation energy vary when we go from top to bottom in a group? (1)
14. Take 25 mL concentrated Hydrochloric acid in one beaker and 25 mL dilute Hydrochloric acid in other beaker. Pieces of Magnesium of same size are added to both the beakers.
 a) In which beaker reaction takes place at a faster rate? (1)
 b) Which factor affected the rate of chemical reaction here? (1)
 c) Write the chemical equation of the reaction. (1)

15. The pH values of some solutions are given.

Solution	pH value
A	2.5
B	6
C	7
D	11

- a) Which one of the above solutions reacts with Hydrochloric acid to form salt ? (1)
- b) Which of the given solutions turn blue litmus red? (1)
- c) Which among them is a neutral solution? (1)

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

16. An element in the 11th group contains electrons in four shells.
- a) To which period does this element belong? (1)
- b) Name the family of this element. (alkali metals, alkaline earth metals, halogens, transition elements.) (1)
- c) Write any two properties of the elements of this family. (2)
17. When egg shell is added to Hydrochloric acid, a gas is produced.
- a) Identify this gas. (1)
- b) Write the chemical equation of this reaction. (1)
- c) If we add powdered egg shell what happens to the rate of the above chemical reaction? Why? (2)
18. 20 mL NaOH solution is taken in a conical flask and three or four drops of phenolphthalein are added.
- a) Write your observation. (1)
- b) What change in colour can be observed in the solution if Hydrochloric acid is added drop by drop to this solution? (1)
- c) Name this type of reaction. (1)
- d) Name the salt formed by the reaction of NaOH solution and Hydrochloric acid? (1)
19. A part of the periodic table is given (symbols are not real)

X	${}_6Y$	Z
${}_{13}P$	Q	R

- a) Identify the group to which ${}_{13}P$ belongs. (1)
- b) Write the electronic configuration of the inert gas in the period in which ${}_{13}P$ is included. (1)

- c) Which one of these elements has the highest metallic character? (1)
 d) Write the electronic configuration of element Q? (1)

20.

Name of positive ion/ symbol	Name of negative ion /symbol
Calcium- Ca^{2+}	Sulphate- SO_4^{2-}
Ammonium - NH_4^+	Phosphate- PO_4^{3-}

- a) Write the chemical formula of the salt formed by the reaction of ammonium ion and sulphate ion. (1)
 b) Write any one use of this salt. (1)
 c) Identify the alkali and acid to be taken for getting calcium phosphate salt? (2)

X	Y	Z
R	Q	P