



ST. JOSEPH'S COLLEGE, PRAYAGRAJ SECOND UNIT TEST - 2023

Class-9

CHEMISTRY

Max. Mks: 30

(Max Time; 90 minutes)

SECTION A

Question 1

A. Choose the most appropriate answer for each of the following:

(2)

i. An element in Group 1 on the periodic table would be considered a/an

- a. Transition metal b. Alkali metal c. Alkaline earth metal d. Halogen

ii. Which of the following elements have same valency and number of valence electrons?

- P Nitrogen
Q Sulphur
R Carbon
S Phosphorus

- a. P and Q b. P and R c. R and Q d. P and S

iii. Which of the following properties do not match with elements of the halogen family?

- a. They are metallic in nature
b. They are diatomic in their molecular form
c. They have seven electron in their outermost shell
d. They are highly reactive chemically

iv. A gas which turns moist starch iodide paper blue black. -

- a. Ammonia b. Chlorine c. Hydrogen sulphide d. Water vapour

B. Fill in blanks with the correct word from the bracket.

(2)

- a. Atoms of elements that are in the same group have the same number of _____. (Protons/protons and neutrons/valence electrons)
b. The long period of the periodic table consists of _____ (8/2/32/18) elements.
c. Vertical column in a periodic table are known as _____. (periods/ rows/ group)
d. Eka- aluminium is _____. (silicon/ gallium/ germanium)

C. Define the following terms-

(2)

- a. Molecule b. Isotopes c. Electronic configuration d. Ion

D. Balance and complete the following equations- .

(2)

- a. $\text{Na}_2\text{O} + \text{H}_2\text{O} \longrightarrow$
b. $\text{Mg} + \text{HCl} \longrightarrow$
c. $\text{NaOH} + \text{CO}_2 \longrightarrow$
d. $\text{Li} + \text{O}_2 \longrightarrow$

E. Match the Column A with Column B.

(2)

Column A.

1. Sodium chloride.
2. Aluminium.
3. Calcium.
4. Neon.

Column B.

- a. 2,8,8,2
b. Ion
c. Ionic bond
d. Valency 3
e. 2,8,2
f..Inert gas



SECTION B

Question 2

- i. State what will happen to the following periodic property (2)
- Metallic character across a period.
 - Number of shells down a group.
- ii. Identify the gas- (2)
- Colourless and odourless gas, changes moist blue litmus red and turns lime water milky.
 - Colourless gas smells like burning sulphur, changes moist blue litmus paper red and then bleaches it.
- iii. An element X has 2 electrons in its M shell, it forms bond with an element Y which has 7 electrons in its third orbit. (3)
- Write the formula of the compound formed.
 - Which nearest gas electronic configuration will element X and Y acquire.
 - Draw the orbital diagram of the compound formed between X and Y.
- iv. Differentiate between the following - (3)
- Sodium atom and Sodium ion
 - Covalent bond and Ionic bond
 - HCl and NH₃ gas (on the basis of chemical test)

Question 3

- i. Using the group and period numbers, identify the elements that are located in each of the following location. (2)
- The element in Group 1 and period 1
 - The element in Group 18 and period 2
 - The element in Group 17 and period 3
 - The element in Group 2 and period 4
- ii. Answer the following- (2)
- State modern periodic law.
 - S, Q and T are the three elements in Dobereiner's triad. If the atomic weight of S is 35.5 and T is 127, calculate the atomic weight of Q.
- iii. Draw the orbital structure to show the formation of the following: (3)
- Methane
 - Calcium oxide
 - Oxygen molecule
- iv. The position of elements P, Q, R, S and T in the periodic table are shown below (3)

Group 1	Group 2	Group 17	Group 18
-	-	-	S
-	Q	R	-
P	-	-	T

- State which is the most reactive (i) metal (ii) non-metal
- State which will form monoatomic molecule.
- State the good reducing agent(s).

*****ALL THE BEST*****