

UNIT TEST

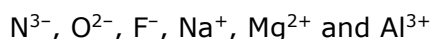
STANDARD- 11
SUB -CHEMISTRY
CODE – 052

TOTAL MARKS - 25
TIME -1 Hr.
MEDIUM - ENGLISH

SECTION-A

➤ **Answer the following question no. 1 to 5 in short.** [05]
[Each question is of 1 mark]

1). Consider the following species:



Arrange them in the order of increasing ionic radii.

2). Assign the period of the element having outer electronic configuration: ns^2np^4 for $n=3$.

3). Predict the formula of the stable binary compound that would be formed by the combination of the following pair of elements.

Magnesium and nitrogen

4). State the type of PH_3 molecule according to the VSEPR theory.

5). Considering x-axis as the internuclear axis which out of the following will not form a sigma bond?

(a) 1s and 1s

(b) 1s and $2p_x$

(c) $2p_y$ and $2p_y$

(d) 1s and 2s.

SECTION- B

➤ **Answer the question no. 6 to 8 in brief.** [Each question is of 2 mark] [06]

6). Explain: Be has higher $\Delta_i H_1$ than B.

7). Which out of NH_3 and NF_3 has higher dipole moment and why?

OR

7). Although geometries of NH_3 and H_2O molecules are distorted tetrahedral, bond angle in water is less than that of ammonia. Explain.

8). Distinguish between a sigma and a pi bond.

SECTION- C

➤ **Answer the question no. 9 to 11 in detail.** [Each question is of 3 mark] [09]

9). How would you explain the fact that the first ionization enthalpy of sodium is Lower than that of magnesium but its second ionization enthalpy is higher than that of magnesium?

OR

9). How do atomic radius vary in a period and in a group? How do you explain the variation?

- 10). Describe the hybridisation in case of PCl_5 . Why are the axial bonds longer as compared to equatorial bonds?
- 11). Which of the following pairs of elements would have a more negative electron gain enthalpy? Explain.
(i) O or F (ii) F or Cl

SECTION- D

➤ **Answer the following question no. 12 as directed.**

[05]

- 12).(i) Write the important conditions required for the linear combination of atomic orbitals to form molecular orbitals. (2 mark)
- (ii) Use molecular orbital theory to explain why the Be_2 molecule does not exist. (2 mark)
- (iii) Arrange in increasing order of stability: O_2 , O_2^+ , O_2^- , O_2^{2-} . (1 mark)