

MISCELLANEOUS EXERCISE

Choose the correct options for each of the following questions. Questions marked with * may have more than one correct options.

- Alred – Rochow's electronegativity depends upon
(A) electron affinity (B) effective nuclear charge
(C) radius (D) (B) and (C) both
- Which of the following transitions involves maximum amount of energy ?
(A) $M_{(g)}^- \longrightarrow M_{(g)}$
(B) $M_{(g)} \longrightarrow M_{(g)}^+$
(C) $M_{(g)}^+ \longrightarrow M_{(g)}^{2+}$
(D) $M_{(g)}^{2+} \longrightarrow M_{(g)}^{3+}$
- * Which is(are) correct among the following ?
(A) Radius of Cl^- ion is 1.56 \AA , while that of Na^+ ion is 0.95 \AA
(B) Radius of Cl atom is 0.99 while that of Na atom is 1.54
(C) The radius of Cl atom is 0.95 , while that of Cl^- ion is 0.81
(D) Radius of Na atom is 0.95 , while that of Na^+ ion is 1.54
- IE_1 and IE_2 of Mg are 178 and $348 \text{ kcal mole}^{-1}$. The energy required for the reaction, $Mg \longrightarrow Mg^{2+}$ is :
(A) $+170 \text{ kcal}$ (B) $+526 \text{ kcal}$
(C) -170 kcal (D) -526 kcal
- The IE_1, IE_2, IE_3, IE_4 and IE_5 of an element are $7.1, 14.3, 34.5, 46.8, 162.2 \text{ eV}$ respectively. The element is likely to be :
(A) Na (B) Si
(C) F (D) Ca
- The electro-negativities of N, C, Si and P are such that :
(A) $P < Si < C < N$ (B) $Si < P < N < C$
(C) $Si < P < C < N$ (D) $P < Si < N < C$
- Which of the following will have maximum electron affinity ?
(A) $1s^2 2s^2 2p^5$ (B) $1s^2 2s^2 2p^6$
(C) $1s^2 2s^2 2p^6 3s^2 3p^5$ (D) $1s^2 2s^2 2p^6 3s^2 3p^6$
- The electronic configuration $1s^2, 2s^2, 2p^6, 3s^2 3p^6 3d^{10}, 4s^2 4p^6 4d^{10}, 5s^2$ is for :
(A) f -block element (B) d -block element
(C) p -block element (D) s -block element
- EN of the element (A) is E_1 and IP is E_2 . Hence EA will be :
(A) $2E_1 - E_2$ (B) $E_1 - E_2$
(C) $E_1 - 2E_2$ (D) $(E_1 + E_2)/2$
- The first ionisation potential (in eV) on N, O atoms are :
(A) $14.6, 13.6$ (B) $13.6, 14.6$
(C) $13.6, 13.6$ (D) $14.6, 14.6$
- The most metallic of the following elements is :
(A) Mg (B) Li (C) K (D) Ca
- Which set is expected to show the smallest difference in first ionisation energy ?
(A) He, Ne, Ar (B) B, N, O
(C) Mg, Mg^+ , Mg^{2+} (D) Fe, Co, Ni

For Questions 13 - 18

Ionization energies of five elements in kcal/mol are given below :

Atom	I	II	III
A	300	549	920
B	99	734	1100
C	118	1091	1652
D	176	347	1848
E	497	947	1500

- Which element is a noble gas ?
(A) A (B) B
(C) C (D) E
- Which element from stable unipositive ion ?
(A) A (B) B
(C) C (D) D
- The element having most stable oxidation state $+2$ is ?
(A) B (B) C
(C) D (D) E

16. Which is a non-metal (excluding noble gas) ?
 (A) A (B) B
 (C) C (D) D
17. If B react with fluorine and oxygen, the molecular formula of fluoride and oxide will be respectively :
 (A) $\text{BF}_3, \text{B}_2\text{O}_3$
 (B) $\text{BF}, \text{B}_2\text{O}$
 (C) BF_2, BO
 (D) None of these
18. Which of the following pair represents elements of same group ?
 (A) B, C (B) A, B
 (C) A, D (D) B, D

For Questions 19 - 22

Elements with their electronic configurations are given below :
 Answer the following questions :

- I. $1s^2 2s^2$ II. $1s^2 2s^2 2p^6$ III. $1s^2 2s^2 2p^6 3s^2$
 IV. $1s^2 2s^2 2p^3$ V. $1s^2 2s^2 2p^5$
19. The element with highest I.E. is :
 (A) I (B) II (C) III (D) V
20. The element with lowest value of electron affinity is :
 (A) I (B) II (C) III (D) IV
21. The most ionic compound will be formed between :
 (A) I and IV (B) I and V
 (C) III and IV (D) III and V
22. Which of the following is the correct order of increasing size ?
 (A) $\text{I} < \text{III} < \text{IV} < \text{V}$ (B) $\text{V} < \text{IV} < \text{III} < \text{I}$
 (C) $\text{I} < \text{IV} < \text{V} < \text{III}$ (D) $\text{V} < \text{IV} < \text{I} < \text{III}$

23. MATCH THE COLUMN:**Column – I (Type of Elements)**

- (A) Inert gas elements
 (B) Representative elements
 (C) Transition elements
 (D) Inner transition elements

Column – II (Outer electronic configuration)

1. ns^{1-2} to $ns^2 np^5$
 2. $1s^2$ and $ns^2 np^6$
 3. $(n-2)f^{1-14} (n-1)d^{1 \text{ or } 2} ns^2$
 4. $(n-1)d^{1-10} ns^1 \text{ or } 2$

24. MATCH THE COLUMN :**Column – I (Elements)**

- (A) F
 (B) Cl
 (C) Fe
 (D) He

Column – II (Periodic Properties)

1. Maximum ionization energy
 2. Maximum electronegativity
 3. Maximum electron affinity
 4. Variable oxidation state

ANSWERS TO IN-CHAPTER EXERCISES

A	6. C	7. B	8. B	9. B
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EXERCISE TO MISCELLANEOUS EXERCISE

1. D	2. D	3. AB	4. B	5. B	6. C	7. C
8. B	9. A	10. A	11. C	12. D	13. D	14. B
15. C	16. A	17. B	18. A	19. B	20. B	21. D
22. D	23. [A-2] [B-1] [C-4] [D-3]		24. [A-2] [B-3] [C-4] [D-1]			