

Class: XI
Subject: Chemistry
Topic: Classification of Elements and Periodicity in Properties
No. of Questions: 27

Q1. Which of the following representations of electronic configuration is incorrect?

- A. $1s^2 2s^2 2p^4$
- B. $1s^2 2s^2 2p^6 3p^2$
- C. $1s^2 2s^2 2p^6$
- D. $1s^2 2s^2 2p^6 3s^2$

Q2. Which of the following has the largest size?

- A. Al
- B. Al^+
- C. Al^{2+}
- D. Al^{3+}

Q3. Which among the following is the largest in size?

- A. Cl^-
- B. S^{2-}
- C. Na^+
- D. F^-

Q4. Which of the following statements is correct?

- A. X^- ion is larger in size than X atom.
- B. X^+ ion is larger in size than X atom.
- C. X^+ ion is larger in size than X^- ion.
- D. X^+ and X^- ions are equal in size.

Q5. The number of periods and groups in the long form of periodic table is, respectively

- A. 7 and 9
- B. 8 and 18
- C. 7 and 18
- D. 6 and 10

Q6. Which set contains pair of elements that do not belong to same group?

- A. Li, Na
- B. Be, Mg
- C. C, N
- D. H, Li

Q7. The elements of the same group of the periodic table have the same

- A. number of protons
- B. valence shell
- C. valence electrons
- D. electron affinity

Q8. Alkali metals belong to

- A. s-block
- B. p-block
- C. d-block
- D. f-block

Q9. The element with electronic configuration is $1s^2 2s^2 2p^6 3s^2$ is a

- A. metal
- B. non metal
- C. metalloid
- D. noble gas

Q10. Modern periodic law states that the periodic properties of elements are the periodic function of

- A. ionization potential
- B. atomic mass
- C. atomic number
- D. atomic volume

Q11. Which one of the following is not a property of a metal?

- A. Lustre
- B. Brittle
- C. Malleability
- D. Ductility

Q12. Among 3rd row elements, atomic size is the maximum for

- A. sodium
- B. argon
- C. magnesium
- D. chlorine

Q13. The electronic configuration 2, 8, 7 belongs to which period of the periodic table?

- A. Second
- B. Third
- C. Fourth
- D. None of these

Q14. The order of ionization energy is

- A. $s < p < d < f$
- B. $s > p > d > f$
- C. $s < d < p < f$
- D. $s > d > p > f$

Q15. Mendeleev classified the elements on the basis of their _____.

- A. increasing atomic numbers
- B. increasing atomic masses
- C. decreasing atomic numbers
- D. decreasing atomic masses

Q16. Which of the following became the reason for the failure of Mendeleev's periodic law?

- A. Alkali metals
- B. Alkaline earth metals
- C. Halogens
- D. Isotopes

Q17. Man made elements belong to _____ series.

- A. actinide
- B. lanthanide
- C. halides
- D. inert gases

Q18. Which of the following series of elements is correct in terms of increasing atomic radii?

- A. $F < Cl < Br$
- B. $Li < K < Na$
- C. $Ca < Mg < Be$
- D. $N < As < P$

Q19. Which of the following elements is a metalloid?

- A. Si
- B. C
- C. Bi
- D. Sn

Q20. Which of the following statements is true?

- A. Atomic radii of elements decrease gradually from left to right.
- B. Metallic character increases across a period.
- C. Chemical reactivity increases and then decreases across a period.
- D. Chemical reactivity increases across a period.

Q21. The first ($\Delta_i H_1$) and the second ($\Delta_i H_2$) ionization enthalpies (kJ mol^{-1}) of the three elements are given below:

	I	II	III
$\Delta_i H_1$	403	549	1142
$\Delta_i H_2$	2640	1060	2080

Identify the element which is likely to be :

- A. A non-metal.
- B. An alkaline earth metal.

Q22. Identify the elements having the following description and write their electronic configuration also :

- A. Group 14, period 3
- B. Group 18, period 2
- C. Group 1, period 6

Q23. What is the basic difference in approach between the Mendeleev's Periodic Law and the Modern Periodic Law ?

Q24. Why do elements in the same group have similar physical and chemical properties?

Q25. How does atomic radius vary in a period and in a group ? How do you explain the variation?

Q26. What are the various factors due to which the ionization enthalpy of the main group elements tends to decrease down a group?

27. Would you expect the second electron gain enthalpy of O as positive, more negative or less negative than the first? Justify your answer.

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