

Class: 10
Subject: Chemistry
Topic: Periodic classification of elements
No. of Questions: 20

- Q1. What were the criteria used by mendeleev in creating his periodic table?
- Q2. How and why does the atomic size vary as you go :
(i) from left to right across a period? (ii) down a group? [2009, 2011 (T-II)]
- Q3. Elements in the same vertical group of the periodic table have same
A. Number of valence electrons
B. Atomic number
C. Atomic mass
D. Atomic volume
- Q4. Why does silicon is classified as Metalloid?
- Q5. Name two elements you would expect to show chemical reactions similar to magnesium. What is the basis for your choice?
- Q6. How will the tendency to gain electrons change as we go from left to right across a period? Why? [2009, 2011 (T-II)]
- Q7. An element having low value of ionization energy and low value of electron affinity is likely to belong to
A. Group IA
B. Group IB
C. Group VIIA
D. Group VIII
- Q8. Why inert gases have zero valencies?

- Q9. Name
- (a) three elements that have a single electron in their outermost shells.
 - (b) Magnesium (Mg) and calcium (Ca) have two electrons in their outermost shells.
 - (c) Neon (Ne), argon (Ar), and xenon (Xe) have filled outermost shells.
- Q10. Lithium, sodium and potassium form a Dobereiner's triad. The atomic masses of lithium and potassium are 7 and 39 respectively. Predict the atomic mass of sodium. [2009]
- Q11. Which set of elements is listed in order of increasing ionization energy?
- A. $\text{Sb} < \text{As} < \text{S} < \text{P} < \text{Cl}$
 - B. $\text{Cl} < \text{Sb} < \text{P} < \text{As} < \text{S}$
 - C. $\text{As} < \text{Cl} < \text{P} < \text{S} < \text{Sb}$
 - D. $\text{Sb} < \text{As} < \text{Cl} < \text{S} < \text{P}$
- Q12. Oxygen (O, 8) and sulphur (S, 16) belong to group 16 of the periodic table :-
- (i) Write the electronic configuration and valency of these two elements?
 - (ii) Which among these will be more electronegative? Why?
- Q13. Which element has
- (a) Two shells, both of which are completely filled with electrons?
 - (b) The electronic configuration 2, 8, 2?
 - (c) a total of three shells, with four electrons in its valence shell?
 - (d) A total of two shells, with three electrons in its valence shell?
 - (e) Twice as many electrons in its second shell as in its first shell?
- Q14. Two elements M and N belong to groups I and II respectively and are in the same period of the periodic table. How do the following properties of M and N vary? [2009, 2011 (T-II)]
- (i) Sizes of their atoms
 - (ii) Their metallic characters
 - (iii) Their valencies in forming oxides
 - (iv) Molecular formulae of their chlorides
- Q15. Which of the following always increases on going from top to bottom in a group?
- A. Metallic character
 - B. Electronegativity
 - C. Oxidizing power
 - D. Tendency to get reduced

- Q16. Why Chlorine (atomic number 17) is more electronegative than sulphur (atomic number 16)
- Q17. Nitrogen (atomic number 7) and phosphorus (atomic number 15) belong to group 15 of the periodic Table. Write the electronic configuration of these two elements. Which of these will be more electronegative? Why?
- Q18. Which of the p-block elements are not representative elements?
A. Alkali metals (I-A)
B. Group-14 elements (IV-A)
C. Group-18 elements (VIII-A)
D. Halogens (VII-A)
- Q19. In the modern periodic table, calcium (atomic number 20) is surrounded by elements with atomic numbers 12, 19, 21, and 38. Which of these have physical and chemical properties resembling calcium?
- Q20. (A) Li, Na, K are all metals that react with water to liberate H₂ gas. Is there any similarity in the atoms of these elements.
(b) Helium is an unreactive gas and Neon gas is a gas of extremely low reactivity, what do their atoms have in common.