

MCQs Questions for
Periodicity of Elements

Paper-I

No 1

The arrangement of elements in the Modern Periodic Table is based on their

- (a) Increasing atomic mass in the period
- (b) Increasing atomic number in the horizontal rows.
- (c) Increasing atomic number in the vertical columns.
- (d) Increasing atomic mass in the group.

(2) Which of the following set of elements is written in order of their increasing metallic character?

- (a) Na Li K (b) C O N
- (c) Mg Al Si (d) Be Mg Ca

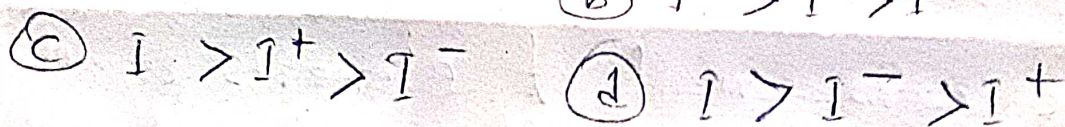
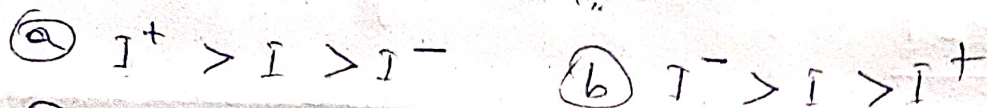
(3) Which of the following is a transition element?

- (a) Pb (b) As (c) Ni (d) Al

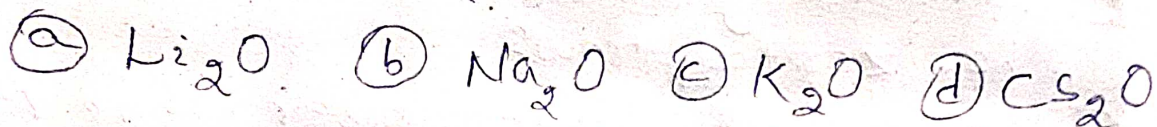
(4) Which of the following is correct order of atomic size?

- (a) $Li < Na < K < Rb < Cs$
- (b) $Li > Na > K > Rb > Cs$
- (c) $Na < K < Li < Rb < Cs$
- (d) $K < Na < Li < Rb < Cs$

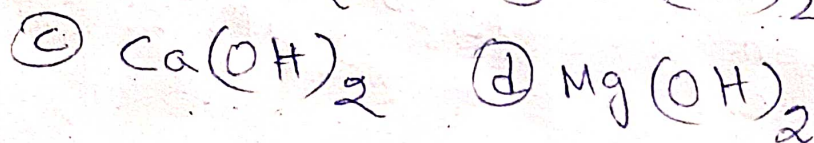
5) Which of the following is correct order of size?



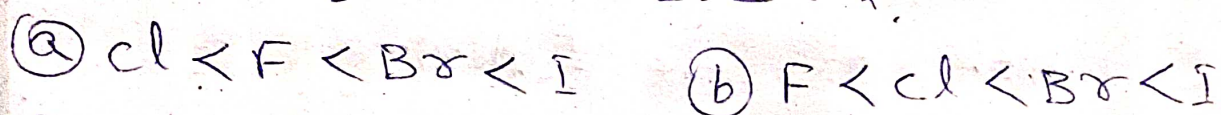
6) Which of the following oxide is most basic?



7) Which of the following hydroxides is most basic?



8) Which of the following is correct order of atomic size?



9) Which of the following elements does not lose an electron easily?



10) The correct order of electronegativity is

(a) $Cl > F > O > Br$ (b) $F > O > Cl > Br$

(c) $F > Cl > Br > O$ (d) $O > F > Cl > Br$

(11) Which one will have the highest 2nd ionisation energy?

(a) $1s^2 2s^2 2p^6 3s^1$

(b) $1s^2 2s^2 2p^4$

(c) $1s^2 2s^2 2p^6$

(d) $1s^2 2s^2 2p^6 3s^2$

(12) For the same value of n , the penetration powers of orbital follows the order

(a) $s = p = d = f$

(b) $p > s > d > f$

(c) $f < d < p < s$

(d) $s < p < d < f$

(13) Which of the following elements has maximum electron affinity?

(a) F (b) S (c) I (d) Cl

(14) The atomic radius increases as we move down a group because

(a) Effective nuclear charge increases

(b) Atomic mass increases

(c) Additive electrons are accommodated in new electron level

(14) Atomic number, increase

(15) Electron affinity depends on

(a) Atomic size (b) Nuclear charge

(c) Atomic number (d) Atomic size and Nuclear charge both

(16) Ionization energy is lowest for

(a) Inert gases (b) Halogens

(c) Alkali metals (d) Alkaline earth metal

(17) In its chemical properties, calcium is most similar to

(a) Es (b) Cu (c) Sc (d) Sr

Short Questions

Paper-I

- 1) Define periodicity?
- 2) Define modern periodic law.
- 3) How many elements are present in 4th and 5th period?
- 4) Why size of Li^+ is smaller than of Li ?
- 5) What do you mean by successive ionisation energy?
- 6) Write the general electronic configuration of p-block elements.
- 7) How many groups and periods are present in the modern periodic table?
- 8) What is the cause of diagonal relation among second and third period elements?
- 9) Why cations of s-block elements are diamagnetic?
- 10) To which group, the element with atomic number 24 belongs?
- 11) Why covalent radius is smaller than van der Waal's radius?

- (12) Define van der Waals radius, atomic radius and ionic radius.
- (13) Why the size of cation is smaller than that of its corresponding atom?
- (14) Why the size of anion is larger than that of its corresponding atom?
- (15) What are isoelectronic ions?
- (16) Define first ionisation energy, 2nd I.E and third I.E.
- (17) Which out of ${}_{7}\text{N}$ and ${}_{8}\text{O}$ has more first ionisation enthalpy and why?
- (18) Why third ionisation energy is greater than second I.E.?
- (19) What is electron gain enthalpy?
- (20) Define second electron affinity.
- (21) Why electron affinity of noble gas is positive?
- (22) Why Nitrogen has negative electron affinity?
- (23) Why electronegativities of elements increase along a period?
- (24) Define effective nuclear charge of shielding constant.

25) In case of 1s electron only, what is its contribution to screening constant?

26) Give a relation to find electronegativity of an element on Mulliken's scale when I.P. and E.A. are measured in electron volts.

Long Questions

1. a) Explain modern Periodic Law.

b) What is meant by periodicity? What is the cause of periodicity of elements?

2) What are s, p, d and f-block elements? Give the characteristics of elements of each block.

3. a) Define atomic radius, what are the difficulties to measure exact atomic radius? Give factors on which atomic size depends.

b) Why van der Waals radius is larger than covalent radius?

4) Define first, second and third ionisation energy. Why third I.E. is greater than second I.E.?

④ Which out of Be and B has more I.E and why?

⑤ (a) What are the factors which affect I.E.?

⑥ Alkaline earth metals always form dipositive ions, why?

⑥ Define electronegativity. Explain factors on which the electronegativity of an atom depend.

⑦ Define electron affinity. Describe various factors on which the electron affinity of an atom depend.

⑧ Explain different electronegativity scales with examples.