Atomic and Ionic radii

25. Which one of the following indicates the correct order of atomic size
(a) *Be* > *F* > *C* > *Ne*
(b) *Be* < *C* < *F* < *Ne*
(c) *Be* > *C* > *F* > *Ne*
(d) *F* < *Ne* < *Be* < *C*

26. Which has the smallest size
(a) Na^+ (b) Mg^{2+}
(c) Al^{3+} (d) P^{5+}

27. A sodium cation has a different number of electrons from
(a) O^{2-} (b) F^-
(c) Li^- (d) Al^{3+}

28. Which of the following statement concerning lanthanides elements is false
(a) Lanthanides are separated from one another by ion exchange method
(b) Ionic radii of trivalent lanthanides steadily increases with increase in the atomic number
(c) All lanthanides are highly dense metals
(d) More characteristic oxidation state of lanthanide elements is +3

29. The lanthanide contraction is responsible for the fact that
(a) *Zr* and *Y* have about the same radius
(b) *Zr* and *Nb* have similar oxidation state
(c) *Zr* and *Hf* have about the same radius
(d) *Zr* and *Zn* have the same oxidation state

30. Elements of which group form anions most readily
(a) Oxygen family
(b) Nitrogen group
(c) Halogens
(d) Alkali metals

31. The unit representing atomic radii and ionic radii is
(a) *nm* (b) *cm*
(c) Å (d) *m*

32. The atomic radii in periodic table among elements from right to left
(a) Decreases
(b) Increases
(c) Remain constant
(d) First decreases and then increases

33. Of the following the ion with the smallest ionic radius is
(a) K^+ (b) Ca^{2+}
(c) Ti^{3+} (d) Ti^{4+}

34. Which of the following does not represent the correct order of the property indicated
(a) $Sc^{3+} > Cr^{3+} > Fe^{3+} > Mn^{3+}$ ionic radii
(b) $Sc < Ti < Cr < Mn$ Density
(c) $Mn^{2+} > Ni^{2+} < Co^{2+} < Fe^{2+}$ ionic radii
(d) $FeO < CaO > MnO > CuO$ Basic nature

35. The order of magnitude of ionic radii of ions Na^{+}, Mg^{2+}, Al^{3+} and Si^{4+} is
(a) $Na^{+} < Mg^{2+} < Al^{3+} < Si^{4+}$
(b) $Mg^{2+} > Na^{+} > Al^{3+} > Si^{4+}$
(c) $Al^{3+} > Na^{+} > Si^{4+} > Mg^{2+}$
(d) $Na^{+} > Mg^{2+} > Al^{3+} > Si^{4+}$

36. The order of the magnitude of ionic radii of ions N^{3-}, O^{2-} and $F^{-}$is
(a) $N^{3-} > O^{2-} > F^{-}$
(b) $N^{3-} < O^{2-} < F^{-}$
(c) $N^{3-} > O^{2-} > F^{-}$
(d) $N^{3-} < O^{2-} > F^{-}$

37. Which statement is correct
(a) For potassium, the atomic radius < ionic radius; but for bromine, the atomic radius > ionic radius
(b) For potassium and bromine both, the atomic radii > ionic radii
(c) For potassium and bromine both, the atomic radii < ionic radii
(d) For potassium, the atomic radius > ionic radius but for bromine, the atomic radius < ionic radius

38. Which of the following ion is the smallest ion
(a) O_2^{+} (b) O_2^{-}
(c) O_2 (d) O_2^{-2}

39. The correct order of radii is
(a) $N < Be < B$
(b) $F^{-} < O^{2-} < N^{3-}$
(c) $Na < Li < K$
(d) $Fe^{3+} < Fe^{2+} < Fe^{4+}$

40. Which one of the following should be most stable
(a) H_2^{+} (b) H^{+}
(c) H (d) H^{-}

41. Which of the following is the correct order of ionic radii
(a) $F > Li > Na > K$
(b) $F > K > Na > Li$
(c) $Na > K > F > Li$
(d) $Li > Na > K > F$

42. Smallest among these species is
(a) Lithium ion (b) Hydrogen
(c) Lithium (d) Helium

43. Which of the following ionic radius would be maximum
(a) C^{4-} (b) N^{3-}
(c) O^{2-} (d) Mg^{2+}

44. Which is helpful in the formation of ionic bond
(a) Only small cation
(b) Only small anion
(c) Small cation and small anion both
(d) Low positive charge, large cation and small anion

45. Which of the following has largest ionic radius
(a) Cs^+ (b) Li^+
(c) Na^+ (d) K^+

46. Point out the wrong statement :
On moving horizontally from left to right across a period in the periodic table
(a) Metallic character decreases
(b) Electronegativity increases
(c) Gram atomic volume first decreases and then increases
(d) Size of the atoms increases for normal elements

47. 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