Valency and oxidation state

26. Which of the following group of elements eliminates electron easily
(a) *N, P, As* (b) *O, S, Se*
(c) *Li, Na, K* (d) *Cl, Ba, I*

27. The maximum valency of an element with atomic number 7 is
(a) 2 (b) 5
(c) 4 (d) 3

28. Which of the following metals exhibits more than one oxidation state
(a) Na (b) Mg
(c) Fe (d) Al

29. Out of the following elements which one do you expect to be most reactive chemically
(a) Mg (b) Ca
(c) Sr (d) Ba

30. Thalium shows different oxidation states because
(a) It is a transition element
(b) Of inert pair effect
(c) Of its amphoteric character
(d) Of its higher reactivity

31. Oxidising action increases in halogen in the following order
(a) *Cl < Br < I < F*
(b) *Cl < I < Br < F*
(c) *I < F < Cl < Br*
(d) *I < Br < Cl < F*

32. Fluorine, chlorine, bromine and iodine are placed in the same group (17) of the periodic table, because
(a) They are non-metals
(b) They are electronegative
(c) Their atoms are generally univalent
(d) They have 7 electrons in the outermost shell of their atom

33. Which of the following sequence correctly represents the decreasing acid nature of oxides
(a) $Li_2O > BeO > B_2O_3 > CO_2 > N_2O_3$
(b) $N_2O_3 > CO_2 > B_2O_3 > BeO > Li_2O$
(c) $CO_2 > N_2O_3 > B_2O_3 > BeO > Li_2O$
(d) $B_2O_3 > CO_2 > N_2O_3 > Li_2O > BeO$

34. Which of the following aqueous acid is most acidic
(a) *HCl* (b) *HF*
(c) *HI* (d) *HBr*

35. The correct order of the increasing ionic character is
(a) $BeCl_2 < MgCl_2 < CaCl_2 < BaCl_2$
(b) $BeCl_2 < MgCl_2 < BaCl_2 > CaCl_2$
(c) $BeCl_2 < BaCl_2 < MgCl_2 < CaCl_2$
(d) $BaCl_2 < CaCl_2 < MgCl_2 < BeCl_2$

36. Which of the following elements is found in native state
(a) *Al* (b) *Au*
(c) *Cu* (d) *Na*

37. The basis of keeping the elements in the group of a periodic table is
(a) Ionisation potential
(b) Electronegativity
(c) Electron affinity
(d) Number of electrons in the valence shell

38. Which of the following electronic configurations in the outermost shell is characteristic of alkali metals
(a) $(n-1)s^2p^6, ns^2p^1$
(b) $(n-1)s^2p^6d^{10}, ns^1$
(c) $(n-1)s^2p^6, ns^1$
(d) $ns^2p^6d^1$

39. On moving down the group gradually increase
(a) Oxidising property
(b) Electronegativity
(c) Acidic property
(d) Metallic property

40. An ion which has 18 electrons in the outermost shell is
(a) K^+ (b) Ca^{2+}
(c) Na^+ (d) Cu^+

41. Increasing order of acid strength of halogen acid is
(a) $HF < HCl < HBr < HI$
(b) $HCl < HBr < HI < HF$
(c) $HF < HI < HBr < HCl$
(d) None of these

42. Which is the weakest base
(a) *NaOH* (b) *KOH*
(c) $Ca(OH)_2$ (d) $Zn(OH)_2$

43. Which of the following elements shows maximum number of different oxidation states in its compounds
(a) Eu (b) La
(c) Gd (d) Am

44. The valency shell of calcium contains
(a) 8 electrons (b) 6 electrons
(c) 4 electrons (d) 2 electrons

45. 3 and 6 electrons are present in the outermost orbit of *A* and *B* respectively. The chemical formula of its compound will be
(a) A_3B_2 (b) A_2B_3
(c) A_2B (d) AB

46. Which of the following halogens doesn't exhibit positive oxidation state in its compounds
(a) *Cl* (b) *Br*
(c) *I* (d) *F*

47. The most basic element is
(a) Fluorine (b) Iodine
(c) Chlorine (d) Bromine

48. Which of the following set has the strongest tendency to form anions

(a) *Ga*, *In* and *Te*
(b) *Na*, *Mg* and *Al*
(c) *N*, *O* and *F*
(d) *V*, *Cr* and *Mn*

49. An element *X* which occurs in the first short period has an outer electronic structure s^2p^1. What are the formula and acid-base character of its oxides
(a) XO_3, basic (b) X_2O_3, basic
(c) X_2O_3, amphoteric (d) XO_2, acidic

50. Which of the following gas does not have an octet or eight electrons in the outer shell
(a) *Ne* (b) *Ar*
(c) *Rn* (d) *He*

51. Beryllium and aluminium exhibit many properties which are similar. But, the two elements differ in
(a) Forming covalent halides
(b) Forming polymeric hydrides
(c) Exhibiting maximum covalency in compounds
(d) Exhibiting amphoteric nature in their oxides