Ionisation energy

31. Which of the following has lowest first ionisation potential
(a) *B* (b) *C*
(c) *N* (d) *O*

32. If first orbit energy of He^+ is – 54.4 *eV*, then the second orbit energy will be
(a) – 54.4 *eV* (b) – 13.6 *eV*
(c) – 27.2 *eV* (d) + 27.2 *eV*

33. The screening effect of inner electrons of the nucleus causes
(a) A decrease in the ionisation potential
(b) An increase in the ionisation potential
(c) No effect on the ionisation potential
(d) An increase in the attraction of the nucleus to the electrons

34. Which of the following has highest first ionization energy
(a) Sulphur (b) Oxygen
(c) Nitrogen (d) Phosphorus

35. The second ionization potential is
(a) Less than the first ionization potential
(b) Equal to the first ionization potential
(c) Greater than the first ionization potential
(d) None of these

36. When the first ionization energies are plotted against atomic number the peaks are occupied
(a) Alkali metals
(b) Halogens
(c) Rare gases
(d) Transition elements

37. Among the following which has the highest first ionization energy
(a) K (b) Na
(c) B (d) Kr

38. The first ionisation potential will be maximum for
(a) Lithium (b) Hydrogen
(c) Uranium (d) Iron

39. Arrange *S*, *P*, *As* in order of increasing ionisation energy
(a) $S < P < As$ (b) $P < S < As$
(c) $As < S < P$ (d) $As < P < S$

40. With reference to concept of ionisation potential, which one of the following sets are correct
(a) $U > K > Cs$ (b) $B > U > K$
(c) $Cs > U > B$ (d) $Cs < U < K$

41. Which among the following species has the highest ionisation potential
(a) *B* (b) *Li*
(c) *Ne* (d) *F*

42. The set representing the correct order of first ionisation potential is
(a) $K > Na > Li$
(b) $Be > Mg > Ca$
(c) $B > C > N$
(d) $Ge > Si > C$

43. Among the following options, the sequence of increasing first ionisation potential will be
(a) $B < C < N$ (b) $B > C > N$
(c) $C < B < N$ (d) $N > C > B$

44. The decreasing order of the ionisation potential in the following elements is
(a) $Ne > Cl > P > S > Al > Mg$
(b) $Ne > Cl > P > S > Mg > Al$
(c) $Ne > Cl > S > P > Mg > Al$
(d) $Ne > Cl > S > P > Al > Mg$

45. Which is the correct order of the first ionization potential of *N*, *O* and *C*
(a) $C > N > O$ (b) $C < N > O$
(c) $O > N > O$ (d) $C > N \sim O$

46. Which of the following order is wrong
(a) $NH_3 < PH_3 < AsH_3$-acidic nature
(b) $Li^+ < Na^+ < K^+ < Cs^+$ -ionic radius
(c) $Al_2O_3 < MgO < Na_2O < K_2O$ - basic
(d) $Li < Be < B < C$ -1st ionisation potential

47. Which of the following has the least ionization potential
(a) Lithium (*Li*) (b) Helium (*He*)
(c) Nitrogen (*N*) (d) Zinc (*Zn*)

48. The first ionisation energy of lithium will be
(a) Greater than Be
(b) Less than Be
(c) Equal to that of Na
(d) Equal to that of F

49. Spectrum of Li^{2+} is similar to that of
(a) *H* (b) *He*
(c) *Be* (d) *Ne*

50. Highest ionisation energy stands for
(a) *He* (b) *C*
(c) *N* (d) *H*

51. Which of the following electrons should have the highest value of ionisation energy (for the same value of the principal quantum number)
(a) *s* (b) *p*
(c) *d* (d) *f*

52. The correct sequence of elements in decreasing order of first ionisation energy is
(a) $Na > Mg > Al$
(b) $Mg > Na > Al$
(c) $Al > Mg > Na$
(d) $Mg > Al > Na$

53. Correct order of polarising power is
(a) $Cs^+ < K^+ < Mg^{2+} < Al^{3+}$
(b) $K^+ < Cs^+ < Mg^{2+} < Al^{3+}$
(c) $Cs^+ < K^+ < Al^{3+} < Mg^{2+}$
(d) $K^+ < Cs^+ < Al^{3+} < Mg^{2+}$

54. Correct increasing order of first ionistion potential is
(a) Na < Al < Mg < Si
(b) $Na < Mg < Al < Si$
(c) $Na > Mg > Al > Si$
(d) $Na < Mg < Al > Si$

55. The ionisation potential of hydrogen from ground state to the first excited state is
(a) $-13.6eV$ (b) $13.6eV$
(c) $-3.4eV$ (d) $3.4eV$

56. In view of their low ionisation energies the alkali metals are
(a) Weak oxidising agents
(b) Strong reducing agents
(c) Strong oxidising agents
(d) Weak reducing agents

57. Of the following iso-electronic ions, the one which has the lowest ionisation potential is
(a) Na^+ (b) Mg^{++}
(c) F^- (d) O^-

58. Ionisation energy in group I-A varies in the decreasing order as
(a) $Li > Na > K > Cs$
(b) $Na > Li > K > Cs$
(c) $Li > Cs > K > Na$
(d) $K > Cs > Na > Li$

59. Which of the following relation is correct with respect to first (*I*) and second (*II*) ionization potentials of sodium and magnesium
(a) $I_{Mg} = II_{Na}$ (b) $I_{Na} > I_{Mg}$
(c) $II_{Mg} > II_{Na}$ (d) $II_{Na} > II_{Mg}$

60. The order of the magnitude of first ionisation potentials of *Be, B, N* and *O* is
(a) $N > O > Be > B$
(b) $N > Be > O > B$
(c) $Be > B > N > O$
(d) $B > Be > O > N$