Atomic number, Mass number, Atomic species

49. Number of protons, neutrons and electrons in the element $^{231}_{89}Y$ is
(a) 89, 231, 89 (b) 89, 89, 242
(c) 89, 142, 89 (d) 89, 71, 89

50. Be^{2+} is isoelectronic with
(a) Mg^{2+} (b) Na^{+}
(c) Li^{+} (d) H^{+}

51. An isostere is
(a) NO_2^- and O_3
(b) NO_2^- and PO_4^{3-}
(c) CO_2, N_2O, NO_3^-
(d) ClO_4^- and OCN^-

52. Nitrogen atom has an atomic number of 7 and oxygen has an atomic number 8. The total number of electrons in a nitrate ion will be
(a) 8 (b) 16
(c) 32 (d) 64

53. If molecular mass and atomic mass of sulphur are 256 and 32 respectively, its atomicity is
(a) 2 (b) 8
(c) 4 (d) 16

54. The nitride ion in lithium nitride is composed of
(a) 7 protons + 10 electrons
(b) 10 protons + 10 electrons
(c) 7 protons + 7 protons
(d) 10 protons + 7 electrons

55. The atomic number of an element is 17. The number of orbitals containing electron pairs in its valence shell is
(a) Eight (b) Six
(c) Three (d) Two

56. The atomic number of an element is 35 and mass number is 81. The number of electrons in the outer most shell is
(a) 7 (b) 6
(c) 5 (d) 3

57. Which of the following is not isoelectronic
(a) Na^{+} (b) Mg^{2+}
(c) O^{2-} (d) Cl^{-}

58. The charge of an electron is $-1.6 \times 10^{-19}C$. The value of free charge on Li^{+}ion will be
(a) $3.6 \times 10^{-19}C$ (b) $1 \times 10^{-19}C$
(c) $1.6 \times 10^{-19}C$ (d) $2.6 \times 10^{-19}C$

59. Iso-electronic species is
(a) F^-, O^{-2} (b) F^-, O
(c) F^-, O^{+} (d) F^-, O^{+2}

60. An element have atomic weight 40 and it's electronic configuration is $1s^2 2s^2 2p^6 3s^2 3p^6$. Then its atomic

number and number of neutrons will be
(a) 18 and 22 (b) 22 and 18
(c) 26 and 20 (d) 40 and 18

61. The nucleus of tritium contains
(a) 1 proton + 1 neutron
(b) 1 proton + 3 neutron
(c) 1 proton + 0 neutron
(d) 1 proton + 2 neutron

62. Which one of the following groupings represents a collection of isoelectronic species
(a) Na^+, Ca^{2+}, Mg^{2+} (b) N^{3-}, F^-, Na^+
(c) Be, Al^{3+}, Cl^- (d) Ca^{2+}, Cs^+, Br

63. Which of the following are isoelectronic and isostructural $NO_3^-, CO_3^{2-}, ClO_3^-, SO_3$
(a) NO_3^-, CO_3^{2-} (b) SO_3, NO_3^-
(c) ClO_3^-, CO_3^{2-} (d) CO_3^{2-}, SO_3

64. The number of electrons in Cl^- ion is
(a) 19 (b) 20
(c) 18 (d) 35

65. The number of neutron in tritium is
(a) 1 (b) 2
(c) 3 (d) 0

66. Tritium is the isotope of
(a) Hydrogen (b) Oxygen
(c) Carbon (d) Sulpher

67. The atomic number of an element is 35. What is the total number of electrons present in all the *p*-orbitals of the ground state atom of that element
(a) 6 (b) 11
(c) 17 (d) 23

68. The nucleus of an element contain 9 protons. Its valency would be
(a) 1 (b) 3
(c) 2 (d) 5

69. The compound in which cation is isoelectronic with anion is
(a) $NaCl$ (b) CsF
(c) NaI (d) K_2S

70. Which among the following species have the same number of electrons in its outermost as well as penultimate shell
(a) Mg^{2+} (b) O^{2-}
(c) F^- (d) Ca^{2+}

71. Six protons are found in the nucleus of
(a) Boron (b) Lithium
(c) Carbon (d) Helium

72. The nitrogen atom has 7 protons and 7 electrons, the nitride ion (N^{3-}) will have
(a) 7 protons and 10 electrons
(b) 4 protons and 7 electrons

(c) 4 protons and 10 electrons
(d) 10 protons and 7 electrons

73. Number of neutrons in heavy hydrogen atom is
(a) 0 (b) 1
(c) 2 (d) 3

74. Which of the following is always a whole number
(a) Atomic weight
(b) Atomic radii
(c) Equivalent weight
(d) Atomic number