Ans. In periodic tablc thc atomic number increases from left to right and nuclear charge will also increase. When imclear charoe changes the properties of elements Wii} also chanaed.

Q62. What is the different Mendeleev's periodic law and Modern periodic law?

Ans.

Mendeleev's Periodic Law	Modern Periodic Law
Properties of elements are thc periodic functions of their atomic masses	Properties of elements are the periodic functions of their atomic number

Q63. Why and how elements are arranged in 4^{t} period?

Ans. The elements are arranged in 4 th period because they are all having same electronic shells and clcments are arranged in 4^{ih} period by Increasing atomic number from left to right in a period.

Q64. Why shielding effect of electrons makes cation formation easy?

Ans. The shielding effect of electron makes the cation formation easy bccausc the electron present between thc nucleas and the outermost shell of an atom, reduce the nuclear charge felt by the electrons present in the outermost shell. The attraction of outer electrons towards nucleus is partially reduced because of presence of inner electrons. As a result an atom experiences less nuclear charge than that of the actual charge so it makes the cation formation easy.

Multiple Choice Questions

1. In which century chemists devoted to arrange the elements in a systematic manner:

(a) 16 (b) 17

(c) 18 (d) 19 2. The vertical columns the periodic table are called:

(a) groups (b) periods

(c) both a & b (d) none 3. The horizontal lines present in the periodic table are called:

(a) groups (b) periods

(c) both a & b (d) none 4. Who was arranged the elements group of three?

(a) Doberiener (b) Newland

(c) Mendeleev (d) Moseley

5. Who determined the correct atomic masses of elements in 1860? (a) Doberiencr (b) Cannizaro

(c) Newland (d) All 6. In which year Newland put forward his observation in the form of law of octaves?

(a) 1829 (b) 1864

(c) 1869 (d) 1896 7. How many elements were present in Mendeleev's periodic table?

(a) 50 (b) 55

(c) 60 (d) 63

Mendeleev arranged elements in his periodic table on the basis of:

(a) Atomic number
(b) Atomic mass
(c) Atomic volume
(d) All of these

In - which year Mendeleev described his periodic law?

(a) 1869 (b) 1870

(c) 1859 (d) 1870 10. In which year Moseley described his periodic law?

(a) 1910 (b) 1912

(b) 1913 (d) 1915 I I. Moseley arranged the elements in his periodic table on the basis of

(a) atomic number
(b) atomic masses
(c) atomic volume
(d) none

12. In modern periodic table the elements in a group do not have continuously increasing

(a) atomic number
(b) atomic masses
(c) atomic volume
(d) none

13. How many groups are present in the modern periodic table?

(b) 10

(c) 15 (d) 18

14. How many periods are present in the modern periodic table?

(c) 10 (d) 12

15. How many elements present in I period.

(d) 18 16. How many elements present in 2 & 3rd periods?

(c) 18 (d) 32

17. How many elements present in 4 & 5th period?

(c) 18 (d) 32 18. How many elements present in 6 period?

(c) 18 (d) 32 19. How many element present in 7

period.

(c) 18 (d) 32 20. Elements of a period show properties.

(a) same (b) different

(c) both a & b (d) nonc 21. The elements of a group properties:

(a) same (b) different

(c) both a & b (d) none 22. How many elements blocks present in modern periodic table.

23. Elements are classified into four blocks depending upon the type of the

(a) shell (b) sub shell

(c) atomic mass (d) atomic number

24. Elements of groups I & 2 have their valence electrons in sub-shell.

25. Elements of groups 13 to 18 have their valence electros in sub shell.

26. Who were trying to convert inferior metals to superior metals?

(a) Alchemist (b) Scientists

(c) Doctors (d) None 27. Which elements are present in 1st periods?

(a) hydrogen (b) helium

(c) both a & b (d) none 28. Second and third periods are called:

(a) normal period

(b) transition series

(c) 2nd transition series

(d) 3rd transition series

29. Which elements are present in 2nd period.

(a) lithium (b) beryllium

(c) boron (d) all

30. Elements with atomic No.58 to 71 are called:

(a) lanthanides (b) actinides

(c) both a & b (d) nonc

31. Lanthanide is belonged to period,

32. Elements with atomic No.90 to 103 are called:

(a) lanthanide (b) actinides (c) both a & b (d) none

33. Actinides arc belonged to period:

(a) 4th

34. Lanthanides series is s(artcd from the elements

(a) lanthanum (b) actinium

(c) osmium (d) nonc

35. Atomic number ot lanthanum is

(a) 57 (b) 58

(c) 59 (d) 60

36. Actinide series is started from the elements

(a) lanthanum (b) actinium

(c) osmium (d) silver

37. Atomic number of actinium is

(a) 57 (b) 60

(c) 80 (d) 89

38. Group number tells about the

(a) 4th (b) 5th

(C) 6th (d) 7th

(a) number of valence electrons

(b) shells

(c) both a & b (d) nonc

39, Period number tells about the

(a) no. of valence electrons

(b) no. of electronic shells

(c) both a & b

(d) none

40. Which period of the modern periodic table is considered incomplete period?

(a) 4th (b) 5th

(C) 6 (d) 7 41. Which elements are present in group I?

(a) hydrogen

(b) lithium

(c) sodium

(d) all

42. Group I is also called

(a) alkali metal (b) alkaline earth

(c) transition (d) halogens 43. How many electrons present in the valence shell of group elements?

44. The grnn;j and 2 and 13 to contain the --

(a) normal

(b) transition clgments

(c) inner transition of elements

(d) Outer transi½on of elements

45. 17 group eþements are known as

(a) aucali metals (b) alkaline earth

(c) halogens (d) noble gases

46. 17 groups elements contains electrons in their outer most shell

47. The element of group 3 to 12 are called

(a) normal elements

(b) transition elements

(c) halogens

(d) noble gases

48. Normal elements are belonged to

(a) s-block (b) p-block

(c) both a & b (d) d & f block

49. All transition elements are belonged to:

(a) s and p block (b) d-block

(c) f-block (d) d & f block

50. All transition elements are
(a) metals (b) non metal
(c) metalloid (d) radioactive

51. Unit of atomic size is
(a) nm (b) pm
(c) kJ mol- (d) both a & b

52. The distance between the Nuclei of two carbon atoms in its elemental is
(a) 150pm (b) 152pm
(c) 154pm (d) 156pm

53. When we move left to right in period atomic number
(a) increases (b) decrease (c) first increase than decrease
(d) none of these

54. When we move from left to right in a period atomic size
(a) increases (b) decreases
(c) first increases than decreases
(d) none of these

55. When we more from top to bottom in a group atomic size
(a) increases (b) decreases
(c) first decrease than increase
(d) none of these

56. Atomic size of lithium is

59. When we move from top to bottom group shielding effect
(a) increases (b) decreases
(c) no effect (d) none of these

When we move from left to right
(a) 150 pm (b) 151 pm
(c) 152 pm (d) 154

57. Atomic size of Neon is
(a) 60 pm (b) 65 pm
(c) 68 pm (d) 69 pm

58. With increase atomic number, the number of electrons in an atom also
in a period shielding effect
(a) increases (b) decreases
(c) no effect (d) none

61. The minimum amount of energy which is required to remove an electron from the gaseous state of an atom is called
(a) ionization energy
(b) electron affinity
(c) electro negativity
(d) all of these

62. The unit of ionization energy is
(a) nm and pm (b) kJmol⁻¹
(c) Newton (d) Pascal

3. When we move from top to bottom ionization energy

(a) increases (b) decreases

(c) no effect (d) none

64. When we move from left to right in a period ionization energy

(a) increases (b) decreases

(c) no effect (d) none

65. The first ionization energy of atom is

(a) +495.8 Kjmol

(b) —495.8 Kjmol

(c) +4950.6 Kjmol

(d) -495.7 Kjmol

66. The amount of energy released

(a) increases (b) decreases when an electron is added in the (c) first increase than decrease outermost shell of an isolated gaseous

(d) none of these

atom is called:

(a) ionization

(b) electron affinity

(c) electro negativity

(d) none

67. Unit of electron affinity is

(a) pm

(c) klmol

68. Electron affinity of fluorine in kJmol- is:

(a) 328

(c) -330

69. The ability of an atom to attract the shared pair of electrons toward, itself in a molecule is called:

(a) Ionization energy

(b) Electron affinity

(c) Electro-negativity

(d) Shielding effect

70. Which element has high value of electro negativity is; (a) sodium

(c) flourine -

71. The atomic radii of the elements in periodic table.

(a) increases from left to right in a period

(b) increases from top to bottom in a group

in a period

(d) decreases from top to bottom in a group

72. The amount of energy given out when an electron is added to an atom is called:

(a) lattice energy

(b) ionization energy

(c) electronegativity
(d) electron affinity

73. Mendeleev Periodic Table was based upon the:
(a) electronic configuration
(b) atomic mass
(c) atomic number
(d) completion of a subshcll

74. Long form of Periodic Table is constructed on the basis of:
(a) Mendeleev Postulate
(b) atomic number
(c) atomic mass'r
(d) mass number

75. 4^{th} and 5^{th} period of the long form of Periodic Table are called:
(a) short periods
(b) normal periods
(c) long period
(d) very long period 76, Which one of the following halogens has lowest electronegativity?
(a) flourine (b) chlorine
(c) bromine (d) iodine 77. Along the period, which one of the following decreases:
(a) atomic radius
(b) ionization energy
(c) electron affinity
(d) electronegativity

Transition elements are:
(a) all gases (b) all metals
(c) all non-metals (d) all metalloids

Mark the incorrect statement about ionization energv:
(a) it is measured in kJmol_
(b) It is absorption of energy
(c) it decreases in a period

(d) it decreases in a group 80.

Point out the incorrect statement about electron affinity:

16.		17.		18.		19.		20.	
21.		22.		23.				25.	
26.		27.		28.		29.		30.	
31.		32.		33.		34.		35.	
36.		37.		38.		39.			
41.		42.						45.	
46.				48.		49.		50.	
61.									
66.									

(a) it is measured in kJmoL

(b) it involved release of energy

(c) it decreases in a period

(d) it decreases in a group

Answer Key