1. Periodic Properties – MCQ – October'21.

1. Fifth period contains _____ elements.
(a) 6 (b) 12 (c) 18 (d) 32

6. _____ period is the longest period of the present periodic table.
(a) second (b) sixth (c) seventh (d) eighth

7 Beryllium exhibits diagonal relationship with _____
(a) aluminium (b) calcium (c) magnesium (d) fluorine

10. Modern Periodic table was given by _____
(a) John Newlands (b) Antoine Lavoisier (c) Moseley (d) Mendeleev

11. Vertical columns of periodic table are known as
(a) Groups (b) Periods (c)Elements (d) Compounds

12. Horizontal rows of periodic table are called?
(a) Groups (b) Periods (c)Elements (d) Compounds

13. Maximum number of electrons in the M shell
(a) 2 (b) 8 (c) 18 (d) 32

14. Scientist who grouped elements in triad
(a) Mendeleev (b) Moseley (c) John Newlands (d) Dobereiner

16. Inert gas present in the second period
(a) Helium (b) Neon (c) Xenon (d) Radon

17. Element present in the beginning of periodic table
(a) Hydrogen (b) Chlorine (c) Lithium (d) Helium

18. Lithium exhibits diagonal relation with
(a) calcium (b) Barium (c) Berrylium (d) Magnesium

19. Number of elements present in the shortest period.
(a) 2 (b) 8 (c) 18 (d) 32

20. Number of elements in the shortest period
(a) 2 (b) 8 (c) 18 (d) 32

21. The atomic radii of inert gases are larger than those of preceding elements due to _____
in completely filled shells.
(a) force of repulsion (b) high I.E. (c) low I. E. (d) force of attraction

22. The minimum amount of energy required to remove the _____ loosely bound electron from an isolated, neutral gaseous is known as _____
(a) Bound enthalpy (b) EA (c) I.E (d) force of attraction

23. _____ has the highest ionization energy in the periodic table
(a) Lithium (b) Hellium (c) chlorine (d) Hydrogen

24. Noble gases have _____ electron affinity.
(a) low (b) highest (c) zero (d) moderate

25. Chlorine has _____ electron affinity than fluorine.
(a) less (b) more (c) same (d) none of the above

26. The tendency of an atom to attract shared pair of electron itself when combined is a compound is called _____ along the period
(a) Electronegativity (b) electropositivity (c) inert (d) none of the above

27. Hydrogen chloride is a _____
(a) pure covalent compound (b) polar covalent compound
(c) molecular covalent compound (d) non polar covalent compound

28. _____ is liquid at room temperature.
(a) Caesium (b) Francium (c) Hydrogen (d) Iron

29. Density of sikali meentals ____(decreases / increases) with atomic number
(a) remains same (b) increases (c) non-uniformly varies (d) decreases

30. oiling point and melting point of halogens _____(increases/decreases) with increase in atomic number.
(a) remains same (b) increases (c) non-uniformly varies (d) decreases

31. The yellowish gas among the following is

a) Fluorine b) Chlorine c) Bromine d) Iodine

32. Which of the following is a covalent chloride

a) Sodium Chloride b) Potassoum Chloride

c) Magnesium Chloride d) Phosphorus Chloride

33. To decrease the chemical reactivity, alkali metals are converted to

a) Oxides b) Chlorides c) Amalgams d) Nitrates

34. The colour of alkali halides is

a) White b) Red c) Yellow d) None of these

35. Atoms of which elements have their outer layers occupied by seven electrons

a) Alkali metals b) Inert gases c) Halogens d) Alkaline earth metals

36. The number of electron shells in the elements of period 3

a) one b) two c) three d) four

37. The noble gas having an electronic configuration of 2.8.8

a) Neon b) Argon c) Xenon d) Radon

38. The group whose elements show zero valency

a) Group 1 b) Group 6 c) Group 12 d) Group 18

39. The non-metal in the period 3 having a valency of 1

a) Chlorine b) Gallum c) Krypton d) Berrylium

40. The alkali metal in the period 2

a) Berrylium b) Boron c) Carbon d) Lithium

41. The element in the period 3 whioch does not form an oxide

a) Argon b) Silicon c) Selenium d) Chloride

42. The element having largest atomic size in periods

a) Halogen b) Alkali Metals c) Alkaline Earth Metals d) Inert Gases

43. Parts (a) to (e) refer to changes in the properties of elements on moving from left to right across a period of the Periodic Table. For each property, change the letter corresponding to the correct answer from the choices A, B, C and D

(i) The non – metallic character of the elements:-

A: decreases B: increases C: remains the same D: depends on the period

(ii) The electronegativity :

A: depends on the number of valence electrons

B: remains the same

C: decreases

D: increases

(iii) The ionization potential:

A: goes up and down B: decreases C: increases D: remains the same

(iv) The atomic size:

A: decreases B: increases

C: remains the same D: sometimes increases and sometimes decreases

(v) The electron affinity of the elements in group 1 to 7 :

A: goes up and then down B: decreases and then increases

C: increases D: decreases

44. Among the period 2 elements the one which has high electron affinity is :

a) Lithium b) Carbon c) Flourine d) Neon

Across

45. Access a period, the ionization potential?

a) increases b) decreases c) remains same d) None of these

46. Down the group, electron affinity?

a) increases b) decreases c) remains same d) None of these

47. In the periodic table alkali metals are placed are in the group?

a) 1 b) 11 c) 17 d) 18

48. Which of the following properties do not match with elements of the halogen family?

a) They have seven electrons in their valence shell

b) They have highly reactive chemically

c) They are metallic in nature

d) they are diatomic in their molecular form

49. An element in period – 3 whose electron affinity is zero

a) Neon b) Sulphur c) Sodium d) Argon

50. Among the period – 2 elements, the element which has high electron affinity is:

a) Lithium b) Carbon c) Chlorine d) Fluorine

51. Ionization Potential increases over a period from left to right because the:

a) Atomic radius increases and nuclear charge increases

b) Atomic radius decreases and nuclear charge increases

c) Atomic radius increases and nuclear charge decreases

d) Atomic radius decreases and nuclear charge decreases

52. If an element A belongs to Period 3 and Group II, then it will have:

a) 3 shells and 2 valence electrons

b) 2 shells and 3 valence electrons

c) 3 shells and 3 valence electrons

d) 2 shells and 2 valence electrons

53. Among the elements given below, the element with the least electronegativity is:

a) Lithium b) Carbon c) Boron d) Fluorine

54. The non – metallic character of the elements : across the period

a) decreases b) increases c) remains the same

b) d) depends on the period

55. The electronegativity: across the period

a) depends on the number of valence electrons b) remains the same

c) decreases d) increases

56. The ionization potential: across the period

a) goes up and down b) decreases c) increases d) remains the same

57. The atomic size: across the period

a) decreases b) increases c) remains the same

d) sometimes increases and sometimes decreases

58. The electron affinity of the elements in groups 1 to 7 : down the group

a) goes up and down b) decreases c) increases d) remains the same

59. Among period 2 elements A, B, C and D, the one which has high electron affinity is

a) Lithium b) Carbon c) Fluorine d) Neon

60. Which of the following properties do not match with elements of the halogen family?

a) They have seven electrons in their valence shell

b) They are highly reactive in nature

c) They are metallic in nature

d) They are diatomic in their molecular form

61. An element in period 3 whose electrons affinity is zero.

a) Neon b) Sulphur c) Sodium d) Argon

62. Among the period 2 elements, the element which has big electron affinity is

a) Lithium b) Carbon c) Chlorine d) Fluorine

63. An element with atomic number 19 will most likely combine chemically with element whose atomic number is :

a) 17 b) 11 c) 28 d) 20

64. Which of the following statements is not a correct statement about the trends when going from left to right across the Periodic Table?

a) The elements become less metallic in nature

b) The number of valency electrons increases

c) The atoms lose their electrons more easily

d) The oxides become more acidic

65. Element X forms a chloride with the formula, XCI2, which is a solid with a high melting point. X would most likely be in same group of the Periodic Table as:

a) Na b) Mg c) Al d) Si

66. Which of the given elements A, B, C, D and E with atomic numbers 2, 3, 7, 10 and 30 respectively belong to the same period?

a) A, B, C

b) B, C, D

c) A, D , E

d) B, D, E

67. The element A, B, C, D and E have atomic numbers 9, 11, 17, 12 and 30 respectively belong to the same period?

a) A and B b) B and D c) A and C d) D and E

68. Which one of the following elements exhibit maximum number of valency electrons?

a) Na b) Al c) Si d) P

69. Which of the following gives the correct increasing order of the atomic radii of O, F and N?

a) O, F, N b) N, F, O c) O, N, F d) F, O, N

70. Which among the following elements has the largest atomic radii?

a) Na b) Mg c) K d) Ca

71. Which of the following elements would lose an electron easily?

a) Mg b) Na c) K d) Ca

72. Which of the following elements does not lose an electron easily?

a) Na b) F c) Mg d) Al

73. Arrange the following elements in the order of their decreasing, metallic character

Na, Si, Cl, Mg, Al

a) Cl>Si>Al>Mg>Na b) Na>Mg>Al>Si>Cl

c) Na>Al>Mg>Cl>Si d) Al>Na>Si>Ca>Mg

74. Arrange the following elements in the order of their increasing, non-metallic character Li, O, C, Be, F

a) F<O<C<Be<Li b) Li<Be<C<O<F

c) F<C<Be<O<Li d) F<O<Be<C<Li

75. Three elements B, Si and Ge are

a) metals b) non – metals

c) metalloids d) metal , non – metal and metalloid respectively

76. Which of the following elements will form an acidic oxide?

a) An element with atomic number 7

b) An element with atomic number 3

c) An element with atomic number 12

d) An element with atomic number 19

77. Which one of the following depict the correct representation of atomic radius (r) of an atom?

a) (i) and (ii) b) (ii) and (iii) c) (iii) and (iv) d) (i) and (iv)

78. Which one of the following does not increase while moving down the group of the periodic table?

a) Atomic radius b) Metallic character c) Valency

d) Number of shells in an element

79. On moving from left to right in a period in the periodic table, the size of the atom

a) Increases b) decreases c) does not change appreciably

d) first decreases and then increases

80. Which of the following set of elements is written in order of their increasing metallic character?

a) Be Mg Ca b) Na Li K c) Mg Al Si d) C O N

81. How many elements have been discovered till now?

a) 120 b) 118 c) 116 d) 114

82. Which law is like the seven notes of music; sa, re, ga, ma, pa ?

a) Law of triad b) Law of octaves c) Both a and b d) None of these

83. What is the fundamental property of classification in modern periodic law?

a) Atomic number b) Atomic volume c) Atomic radius d) Atomic mass

84. Among the following, which are the bridge elements?

a) C-Mg b) Li-Mg c) Be-Si d) Be-B

85. Which period of the periodic table consist of elements known as typical elements?

a) 1^{st} period b) 2^{nd} period c) 3^{rd} period d) 4^{th} period

86. The atomic size on moving across the period

a) decreases b) increases c) remains the same

d) sometimes increases and sometimes decreases

87. The non – metallic character of the elements down the group

a) decreases b) increases c) remains the same

d) depends on the period

88. An element with the atomic number 19 will most likely combine chemically with the element whose atomic number is

a) 17 b) 11 c) 18 d) 20

89. An element X has an atomic number 15. With which of the following elements will it show similar chemical properties?

a) Ne (10) b) N(7) c) O(8) d) Be(4)

90. Which of the following properties do not match with elements of the halogen family?

a) They have seven electrons in their valence shell

b) They are highly chemically reactive

c) They are metallic in nature

d) They are diatomic in their molecular form

91. If an element is _____ have

a) 3 shells and 2 valence electrons

b) 2 shells and 3 valence electrons

c) 3 shells and 3 valence electrons

d) 2 shells and 2 valence electrons

92. The set representing the correct order of first ionization is

a) K>Na>Li b) Be>Mg>Ca c) B>C>N d) Ge>Si>C

93. Ionization potential increases across a period from left to right because the

a) Atomic radius increases and nuclear charge increases

b) Atomic radius decreases and nuclear charge decreases

c) Atomic radius increases and nuclear charge decreases

d) Atomic radius decreases and nuclear charge increases

94. Which of the following elements would lose an electron easily

a) Mg b) Na c) K d) Ca

95. Among the elements of period 2 , the element which has less electron affinity is

a) lithium b) carbon c) chloride d) fluorine

96. The electronegativity on moving from left to right in a periods

a) depends on the number of valence electrons

b) remains the same c) decreases d) increases

97. Which of the following is most electronegative?

a) Carbon b) Silicon c) Lead d) Tin

98. With reference to the variation of properties in the periodic table, which of the following is generally true?

a) Atomic size increases from left to right across a period

b) Ionization potential increases from left to right across a period

c) Electron affinity increases on moving down the group

d) Electronegativity increases on moving down the group

Periodic properties of Elements

1. Select the correct answers from the given choices A, B, C, D.

(i) Which one represents the elements of group 1?

A. Li, Be, B B. Li, Na, K C. O, F, Ne D. H, He, Ne

(ii) What is the basis of long form of the periodic table?

A. Atomic mass B. Atomic number

C. Atomic size D. Metallic and nonmetallic character

(iii) What is the valency of halogens?

A. 7 B. 3 C. 1 D. 4

(iv) In the modern periodic table, which one is most correct about a period?

A. The first element is an alkali metal, and the last element is a halogen

B. The first element is a noble gas, and the last one is an alkali metal

C. The first element is an alkali metal, and the last element is a noble gas

D. Each element is a nonmetal

(v) Which element has two shells, each one of which is completely filled with electrons?

A. Na B. Al C. F D. Ne

(vi) Which element has a total of three shells and there are four electrons in its valence shells?

A. P B. O C. Si D. S

(vii) Which one of the following has the largest atomic radius?

A. Li B. F C. K D. Br

(viii) The element which has a total of two shells and there are three electrons in its valence shell is?

A. Be B. B C. Al D. Mg

(ix) Which one of the following has the smallest atomic radius?

A. Li B. F C. K D. Br

(x) The element which has electronic configuration 2, 8, 2 is:

A. Na B. Al C. Mg D. Ne

(xi) Which element has twice as many electrons in its second shell as in the first shell?

A. Be B. B C. C D. N

(xii) Which one of the following is most reactive?

A. Li B. Na C. K D. Rb

(xiii) Which one of the following is most metallic?

A. Na B. Mg C. Al D. Si

(xiv) Which one of the following is least reactive element?

A. F B. Cl C. Br D. I

(xv) Which one of the following is most electronegative?

A. F B. Cl C. Br D. I

(xvi) Which one of the following is an oxide of an alkali metal?

A. Na_2O B. MgO C. SiO_2 D. Al_2O_3

(xvii) 'Atomic number is the fundamental property of an element'. Write the name of the scientist who proved it by an *X* - ray experiment?

A. Bohr B. Newlands C. Mendeleev D. Moseley

(xviii) What is the atomic number of an element of period 2 and group 17 of the periodic table?

A. 10 B. 9 C. 17 D. 19

(xix) Which of the following pairs of elements are members of the same group?

A. K and Sr B. Ar and Cl C. Si and Ca D. O and S

(xx) Which one of the following has the largest ionisation energy?

A. Ar B. Cl C. K D. Al

(xxi) Which one of the following is an alkali metal?

A. Mg B. Al C. K D. Kr

(xxii) Which one of the following is a member of halogen family?

A. Cu B. Cr C. Cl D. Ca

(xxiii) The total number of elements in period 3 of the periodic table is:

A. 2 B. 8 C. 18 D. 32

(xxiv) Which electronic configuration corresponds to a noble gas?

A. 2, 2 B. 2, 8, 2 C. 2, 8, 5 D. 2, 8, 8

(xxv) Which electronic configuration corresponds to an alkali metal?

A. 2, 2 B. 2, 8, 2 C. 2, 8, 1 D. 2, 8, 8

(xxvi) Which electronic configuration corresponds to a halogen?

A. 2, 2 B. 2, 8, 2 C. 2, 8, 1 D. 2, 8, 7

(xxvii) Which one is an oxide of group 2 metal?

A. MgO B. K_2O C. Na_2O D. Al_2O_3

(xxviii) Among the elements given below the element with highest electronegativity is

A. lithium B. carbon C. boron D. fluorine

(xxix) Ionisation potential increases in a period from left to right because

A. atomic radius increases and nuclear charge increases

B. atomic radius decreases and nuclear charge decreases

C. atomic radius increases and nuclear charge decreases

D. atomic radius decreases and nuclear charge increases

(xxx) If an element A belongs to period 3 and group 2, then it will have

A. 3 shells and 2 valence electrons

B. 2 shells and 3 valence electrons

C. 3 shells and 3 valence electrons

D. 2 shells and 2 valence electrons