JEE MAIN : CHAPTER WISE TEST PAPER-3

SUBJECT :- CHEMISTRY **DATE.....**
CLASS :- 11th **NAME.....**
CHAPTER :- PREODIC TABLE **SECTION.....**

(SECTION-A)

1. The atomic volume was chosen as the basis of periodic classification of elements by :
(A) Niels Bohr (B) Mendeleev
(C) Lother Maeyer (D) Newlands

2. Which one of the following statements related to the modern periodic table is **incorrect** ?
(A) The p-block has 6 columns, because a maximum of 6 electrons can occupy all the orbitals in a p-subshell.
(B) The d-block has 8 columns, because a maximum of 8 electrons can occupy all the orbitals in a d-subshell.
(C) Each block contains a number of columns equal to the number of electrons that can occupy that subshell.
(D) The block indicates value of azimuthal quantum number (l) for the last subshell that received electrons in building up the electronic configuration.

3. Which of the following is/are generally true regarding effective nuclear charge (Z_{eff}) :
(A) It increases on moving left to right in a period.
(B) It remains almost constant on moving top to bottom in a group.
(C) For isoelectronic species, as Z increases, Z_{eff} decreases.
(D) Both (A) and (B).

4. Among following species which of them have maximum Z_{eff}
(A) Sn (B) Sn^{4+} (C) In (D) In^{+}

5. Most stable oxidation state of gold is :
(A) + 1 (B) +3 (C) +2 (D) zero

6. Which of the following is correct order of stability :
(A) $Tl^{3+} > Bi^{3+}$ (B) $PbO_2 > PbO$
(C) $BiI_5 < BiF_5$ (D) $Sn^{2+} = Ge^{2+}$

7. Which one of the following is the smallest in size ?
(A) N^{3-} (B) O^{2-} (C) F^{-} (D) Na^{+}

8. Which of the following order of radii is correct ?
(A) Li < Be < Mg (B) $O^{+} < O^{2-} < N^{3-}$
(C) O < F < Ne (D) $Na^{+} > F^{-} > O^{2-}$

9. Match list – I with list – II and select the correct answer using the codes given below –

List – I Ion	**List – II** Radius
(I) Li^{+}	(a) 216
(II) Na^{+}	(b) 195
(III) Br^{-}	(c) 60
(IV) I^{-}	(d) 95

Codes :

	I	II	III	IV
(A)	a	b	d	c
(B)	b	c	a	d
(C)	c	d	b	a
(D)	d	c	b	a

10. Which electronic configuration of neutral atoms will have the highest first ionisation energy ?
(A) $1s^2\ 2s^2\ 2p^4$ (B) $1s^2\ 2s^2\ 2p^3$
(C) $1s^2\ 2s^2\ 2p^2$ (D) $1s^2\ 2s^2\ 2p^1$

11. Ionisation energy :
(A) increases with an increase in atomic radii.
(B) is independent of atomic radii.
(C) decreases with an increase in atomic radii.
(D) remains constant with an increase or decrease in atomic radii.

12. For electron affinity of halogens which of the following is correct ?
(A) Br > F (B) F > Cl
(C) Br < Cl (D) $F^{-} > I$

13. Which of the following will have the most negative electron gain enthalpy and which the least negative ?
(A) F, Cl (B) Cl, F (C) S, Cl (D) Cl, P

14. Following the Mulliken scale, what parameters are required to evaluate electronegativity ?
(A) Only electronegativity
(B) Only electron affinity
(C) Electron affinity and ionization energy
(D) Ionic potential and electronegativity

15. The electronegativity of the following elements increases in the order :
(A) C < N < Si < P (B) N < Si, < C < P
(C) Si < P < C < N (D) P < Si < N < C

16. The outer most electronic configuration of the most electronegative atom is :
(A) $ns^2 np^5$ (B) ns^2np^6
(C) ns^2np^4 (D) ns^2np^3

17. Second electron effinity of an element is :
(A) Always exothermic
(B) Endothermic for few elements
(C) Exothermic for few elements
(D) Always endothermic

18. The first ionisation energy in eV of N & O are respectively given by :
(A) 14.6, 13.6 (B) 13.6, 14.6
(C) 13.6, 13.6 (D) 14.6, 14.6

19. Atomic radii of F & Ne in Angstrom are respectively given by :
(A) 0.72, 1.60 (B) 1.60, 1.60
(C) 0.72, 0.72 (D) 1.60, 0.72.

20. From the given set of species, point out the species from each set having highest Z_{eff}
(a) O^{2-}, F^-, Na^+ (b) Li, Be, Na
(c) He, Li^+, H^-

	a	b	c
(A)	Na^+	Be	Li^+
(B)	O^{2-}	Li	H^-
(C)	F^-	Na	He
(D)	Na^+	Be	He

(SECTION-B)

21. Elements of which period show maximum inert pair effect :
(A) 3 (B) 4 (C) 5 (D) 6

22. Calculate the Z_{eff} (approx) for 4s electron of Ni-atom according to Slater's rule.

23. Calculate experimental bond moment (Approximate, in Debye) of A – B bond. If electronegativity of element A & B is 2 and 3.5 respectively & bond length is 3.92 Å. (Round off to the nearest integer)

24. If there were 9 periods in the periodic table & each orbital can have maximum 5 electrons, then how many maximum number of elements will be present in period 9?

25. If each orbital can accommodate maximum 4 electrons then how many total number of electrons are present in 3rd energy shell.

26. Find the product of multiplication of number of electrons corresponding to $(n + l) = 3$ and $l = 2$ in Cu (29).

27. Find the number of electrons present in the Br^- ion which are having the (+1) value of magnetic quantum number (m).

28. Find out the electronegativity difference between two atoms when the percentage ionic character is 19.5 %.

29. Find the number of 'p' block elements from the following atomic numbers given below.
83 79 42 64 37 54 34

30. The number of electrons present in the s-subshell within Mn.