DPP No: 06

Maximum Time 50 Min

Chemistry

TARGET JEE-MAINS

SYLLABUS : Periodic Table & Chemical Bonding

1. Which statement is wrong for the long form of periodic table-

(A) Number of periods are 7 and groups 18

(B) No. of valence shell electrons in a period are same

(C) VIII period contains 32 elements

(D) Lanthanides and actinides are placed in same group

2. Which of the following set of elements belongs to same period -

(A) Zn, Cd, Hg (B) Fr, Ra, U (C) K, Ca, Ag (D) None

3. Which statement is false :

(A) Screening effect increases down the group

(B) Zeff increases down the group

(C) Zeff. increases in a period

(D) All

4. Which of the following is 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).

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

6. Most stable oxidation state of gold is :

(A) + 1 (B) +3 (C) +2 (D) zero

7. The oxidation state of nitrogen varies from :

(A) –3 to + 5 (B) 0 to +5 (C) –3 to 1 (D) +3 to +5

8. Electrons of which subshell do not participate in bonding due to inert pair effect ?

(A) 6s (B) 6p (C) 5d (D) 4f

9. In which of the following elements, + 3 oxidation state is more stable than + 5 ?

(A) P (B) As (C) N (D) Bi

10. Atomic radii of Fluorine and Neon in Angstrom units are given by -

(A) 0.72, 1.60 (B) 1.60, 1.60

(C) 0.72, 0.72 (D) None of these

11. Which group of atoms have nearly same atomic radius:

(A) Na, K, Rb, Cs (B) Li, Be, B, C

(C) Fe, Co, Ni (D) F, Cl, Br, I

12. Which of the following order of radii is correct

(A) Li < Be < Mg (B) $H^+ < Li^+ < H^-$ (C) O < F < Ne (D) $Na^+ > F^- > O^{-2}$

13. In which of the following compound, distance between two nuclei is maximum

(A) CsF (B) KI (C) CsI (D) LiI

14. Incorrect statement is

(A) Atomic size $\propto Z_{eff}$

(B) Atomic size $\propto$ negative charge

(C) Atomic size $\propto \frac{1}{\text{Bond order}}$

(D) Atomic size $\propto$ Screening effect

15. Which one of the following statements is incorrect in relation to ionisation enthalpy ?

(A) Ionization enthalpy increases for each successive electron.

(B) The greatest increase in ionization enthalpy is experienced on removal of electron from core of noble gas configuration.

(C) End of valence electrons is marked by a big jump in ionization enthalpy.

(D) Removal of electron from orbitals bearing lower n value is easier than from orbitals having higher n value.

16. The first ionisation enthalpies of Na, Mg, Al and Si are in the order :

(A) Na < Mg > Al < Si (B) Na > Mg > Al > Si

(C) Na < Mg < Al < Si (D) Na > Mg > Al < Si

17. Among halogens, the correct order of amount of energy released in electron gain (electron gain enthalpy) is:

(A) F > Cl > Br > I (B) F < Cl < Br < I (C) F < Cl > Br > I (D) Cl > Br > F > I

18. The order of electron gain enthalpy (magnitude) of O, S and Se is :

(A) O > S > Se (B) S > Se > O (C) Se > S > O (D) S > O > Se

19. Electronic configurations of four elements A, B, C and D are given below :

(i) $1s^2 2s^2 2p^6$ (ii) $1s^2 2s^2 2p^4$ (iii) $1s^2 2s^2 2p^6 3s^1$ (iv) $1s^2 2s^2 2p^5$

Which of the following is the correct order of increasing tendency to gain electron :

(A) (i) < (iii) < (ii) < (iv) (B) (i) < (ii) < (iii) < (iv)

(C) (iv) < (ii) < (iii) < (i) (D) (iv) < (i) < (ii) < (iii)

20. Which of the following is affected by the stable electron configuration of an atom ?

(a) Electronegativity (b) Ionisation enthalpy

(c) Electron gain enthalpy

Correct answer is :

(A) only electronegativity (B) only ionisation enthalpy

(C) both electron gain enthalpy and ionisation enthalpy

(D) all of the above

21. Increasing order of electronegativity -

(A) Bi < P < S < Cl (B) P < Bi < S < Cl

(C) S < Bi < P < Cl (D) Cl < S < Bi < P

22. Which of the following is most electronegative element.

(A) Li (B) Mg (C) H (D) Na

Integer Value Quetions

23. The atomic number of an element which can not show the oxidation state of +3 is-

24. The most common oxidation state of an element is –2. The number of electrons present in its outer most shell is -

25. The oxidation number that iron does not exhibit in its common compounds or in its elemental state is :

Answer Key

1.	**(B)**	**2.**	**(B)**	**3.**	**(B)**	**4.**	**(D)**	**5.**	**(A)**	**6.**	**(D)**	**7.**	**(A)**
8.	**(A)**	**9.**	**(D)**	**10.**	**(A)**	**11.**	**(C)**	**12.**	**(B)**	**13.**	(C)	**14.**	**(A)**
15.	**(D)**	**16.**	**(A)**	**17.**	**(C)**	**18.**	**(B)**	**19.**	**(A)**	**20.**	**(C)**	**21.**	**(A)**
22.	**(C)**	**23.**	**(32)**	**24.**	**(6)**	**25.**	**(1)**						