

Practice Paper

Time : 2 Hour

11th standard (JEE BASED)

Total Marks : 200

PERIODIC TABLE

Chemistry

* SECTION - A

[160]

- Modern periodic table is based on the atomic number of the elements. The experiment which proved the significance of the atomic number was
 - Millikan's oil drop experiment
 - Moseley's work on X -ray spectra
 - Bragg's work on X -ray diffraction
 - Discovery of X -rays by Rontgen
- An element whose *IUPAC* name is ununtrium (Uut) belongs to
 - s - block element
 - p - block element
 - d - block element
 - Transition element
- Total number of element in 10^{th} period of *P.T.* will be
 - 32
 - 50
 - 72
 - 56
- Which of the following pairs has both members from the same group of the periodic table
 - $Mg - Ba$
 - $Mg - Na$
 - $Mg - Cu$
 - $Mg - K$
- The fundamental basis of the present-day Periodic Table is that elements are
 - Arranged in the order of increasing atomic weights
 - Grouped according to chemical properties
 - Arranged in the order of increasing number of neutrons in the atomic nucleus
 - Arranged in the order of increasing number of protons in the nucleus
- General electronic configuration of outermost and penultimate shell is $(n-1)s^2(n-1)p^6(n-1)d^xns^2$. If $n = 4$ and $x = 5$, then number of protons in the nucleus will be :-
 - > 25
 - < 24
 - 25
 - 30
- The atomic number of Unnilunium is.....

(A) 101

(B) 95

(C) 98

(D) 106

8. Match List I with List II

List –I (Atomic Number)	List –II (Block of periodic table)
A 37	I <i>p</i> -block
B 78	II <i>d</i> -block
C 52	III <i>f</i> -block
D 65	IV <i>s</i> -block

નીચે આપેલા વિકલ્પોમાંથી યોગ્ય ઉત્તરની પસંદગી કરો.

(A) $A - II, B - IV, C - I, D - III$ (B) $A - I, B - III, C - IV, D - II$ (C) $A - IV, B - III, C - II, D - I$ (D) $A - IV, B - II, C - I, D - III$ 9. In case of isoelectronic species the size of F^- , Ne and Na^+ is affected by:(A) Principal quantum number (n)

(B) None of the factors because their size is the same

(C) Electron-electron interaction in the outer orbitals

(D) Nuclear charge (z)

10. Incorrect order of radius is

(A) $Sr^{2+} < Rb^+ < Br^- < Se^{2-}$ (B) $Nb^{5+} < Zr^{4+} < Y^{3+}$ (C) $Co > Co^{2+} > Co^{3+} > Co^{4+}$ (D) $Ba^{2+} < Cs^+ < Se^{2-} < As^{3-}$

11. The trivalent ion having largest size in lanthanide series is

(A) Ti (B) Zr (C) Hf (D) La

12. Which of the following has the largest ionic radius

(A) Na^+ (B) Ni^+ (C) Cs^+ (D) Mg^{+2}

13. Following triads has approximately equal size ?

(A) Na^+, Mg^{2+}, Al^{+3} (B) F^-, Ne, O^{2-} (C) Mn^+, Cr, Fe^{2+} (D) Fe, Co, Ni

14. Which among the following elements has the highest first ionization enthalpy?

(A) Nitrogen

(B) Boron

(C) Carbon

(D) Oxygen

15. A neutral atom will have the lowest ionization potential when its electronic configuration is

(A) $1s^1$ (B) $1s^2, 2s^2p^6$ (C) $1s^2, 2s^2p^2$ (D) $1s^2, 2s^2p^6, 3s^1$

16. In halogens, with the increase of atomic number which habit is found
 (A) Habit to loose electrons decreases
 (B) Ionic radii decreases
 (C) Ionization potential decreases
 (D) In MX_2 (M = metal and X = halogen), covalent properties decreases
17. How many ionisation energies can carbon have
 (A) 1 (B) 2 (C) 4 (D) 6
18. In ionisation of hydrogen, the energy required is eV
 (A) 13.6 (B) > 13.6 (C) < 13.6 (D) 1.5
19. Which of the following represents the correct order of increasing first ionization enthalpy for Ca, Ba, S, Se and Ar ?
 (A) $Ca < S < Ba < Se < Ar$ (B) $S < Se < Ca < Ba < Ar$
 (C) $Ba < Ca < Se < S < Ar$ (D) $Ca < Ba < S < Se < Ar$
20. The incorrect statement is
 (A) The first ionization enthalpy of K is less than that of Na and Li
 (B) Xe does not have the lowest first ionization enthalpy in its group
 (C) The first ionization enthalpy of element with atomic number 37 is lower than that of the element with atomic number 38 .
 (D) The first ionization enthalpy of Ga is higher than that of the d -block element with atomic number 30.
21. Given below are two statements : one is labelled as Assertion (A) and the other is labelled as Reason (R)
 Assertion (A) : The first ionization enthalpy of $3d$ series elements is more than that of group 2 metals
 Reason (R) : In $3d$ series of elements successive filling of d -orbitals takes place.
 In the light of the above statements, choose the correct answer from the options given below :
 (A) Both (A) and (R) are true and (R) is the correct explanation of (A)
 (B) Both (A) and (R) are true but (R) is not the correct explanation of (A)
 (C) (A) is false but (R) is true
 (D) (A) is true but (R) is false
22. Highest energy will be absorbed to eject out the electron in the configuration
 (A) $1s^2 2s^2 2p^1$ (B) $1s^2 2s^2 2p^3$ (C) $1s^2 2s^2 2p^2$ (D) $1s^2 2s^2 2p^4$
23. Which of the following statement is not correct
 (A) Ionic mobility of $Na^+(aq)$ is greater than $Mg^{2+}(aq)$

- (B) The EA of ' F ' atom is more than ' Cl ' atom
 (C) Second IP of ' B ' atom is greater than that of ' C ' atom
 (D) IE of O^- is less than that of ' O ' atom
24. From the ground state electronic configuration of the elements given below, pick up the one with highest value of second ionisation energy.
 (A) $1s^2 2s^2 2p^6 3s^2$ (B) $1s^2 2s^2 2p^6 3s^1$ (C) $1s^2 2s^2 2p^6$ (D) $1s^2 2s^2 2p^5$
25. Which electron affinity process would liberate the most energy ?
 (A) $[He] 2s^2 + e^- \rightarrow [He] 2s^2 2p^1$
 (B) $[He] 2s^2 2p^2 + e^- \rightarrow [He] 2s^2 2p^3$
 (C) $[He] 2s^2 2p^3 + e^- \rightarrow [He] 2s^2 2p^4$
 (D) $[He] 2s^2 2p^6 + e^- \rightarrow [He] 2s 2p^6 3s^1$
26. Which of the following elements will have the lowest electron affinity
 (A) Nitrogen (B) Flourine (C) Chlorine (D) Phosphorus
27. The most electropositive element possesses the electronic configuration
 (A) $[He] 2s^1$ (B) $[Ne] 3s^2$ (C) $[Xe] 6s^1$ (D) $[Xe] 6s^2$
28. Match the column
- | Column –I | Column –II |
|--------------------------|-----------------|
| (A) Ionisation potential | (P) $O < F < N$ |
| (B) Electronegativity | (Q) $N < O < F$ |
| (C) Z_{eff} | (R) $O < N < F$ |
| (D) Electron affinity | (S) $N < C < O$ |
- (A) $A - P, B - Q, C - S, D - R$ (B) $A - R, B - Q, C - Q, D - Q, S$
 (C) $A - P, B - Q, C - Q, D - R$ (D) $A - R, B - Q, R, C - P, D - S$
29. With respect to chlorine, hydrogen will be
 (A) Electropositive (B) Electronegative
 (C) Neutral (D) None of the above
30. An element ' P ' has atomic number 56. What will be the formula of its halide ?
 (A) PX (B) PX_2 (C) PX_3 (D) P_2X_3
31. Identify the element for which electronic configuration in +3 oxidation state is $[Ar]3d^5$:
 (A) Ru (B) Mn (C) Co (D) Fe
32. Diagonal relationship is shown by
 (A) Elements of first period
 (B) Elements of second period

- (C) Elements of third period
(D) (b) and (c) both
33. Out of the following elements which one do you expect to be most reactive chemically
(A) *Mg* (B) *Ca* (C) *Sr* (D) *Ba*
34. An element *X* which occurs in the first short period has an outer electronic structure s^2p^1 . What are the formula and acid-base character of its oxides
(A) XO_3 , basic (B) X_2O_3 , basic
(C) X_2O_3 , amphoteric (D) XO_2 , acidic
35. Which element has the greatest tendency to loose electrons
(A) *F* (B) *S* (C) *Fe* (D) *Be*
36. What is the correct order of acidic nature
(A) $SO_2 < SeO_2 < TeO_2$ (B) $SO_2 > SeO_2 > TeO_2$
(C) $SO_2 = SeO_2 = TeO_2$ (D) $SO_2 < SeO_2 > TeO_2$
37. Choose the correct order for given property
(*M.P.* → *Melting Point*; *S* → *Solubility*)
(A) *M.P.* $CaF_2 > MgF_2 > BeF_2$;
S $MgF_2 < CaF_2 < BeF_2$
(B) *M.P.* $CaO > BeO > MgO$;
S $BeO < MgO < CaO$
(C) *M.P.* $AgCl < KCl < NaCl$;
S $AgCl < NaCl > KCl$
(D) *M.P.* $AgCl > KCl > NaCl$;
S $KI > LiI > NaI$
38. Chemical property of *Li* and *Mg* are similar because
(A) These belong to same group
(B) Ionisation potential of both is same
(C) Shows diagonal relationship
(D) Both electron affinity is same
39. Given below are the oxides:
 Na_2O, As_2O_3, N_2O, NO and Cl_2O_7
Number of amphoteric oxides is
(A) 0 (B) 1 (C) 2 (D) 3
40. The correct decreasing order for metallic character is
(A) $Na > Mg > Be > Si > P$
(B) $P > Si > Be > Mg > Na$

(C) $Si > P > Be > Na > Mg$

(D) $Be > Na > Mg > Si > P$

*** SECTION - B**

[40]

41. The number of elements in the 5th period of the periodic table are
42. Total number of d electrons present in an element with atomic no. 78 is
43. Assuming that elements are formed to complete the seventh period, what would be the atomic number of the alkaline earth metal of the eighth period?
44. Total number of elements in 10th period of P.T. will be
45. If IUPAC name of an element is "Unununnium" then the element belongs to n th group of periodic table. The value of n is _____
46. How many ionisation energies can carbon have
47. The first ionization enthalpy of Na, Mg and Si , respectively, are: 496, 737 and 786 kJ mol^{-1} . The first ionization enthalpy (kJ mol^{-1}) of Al is
48. These are physical properties of an element
(A) Sublimation enthalpy
(B) Ionisation enthalpy
(C) Hydration enthalpy
(D) Electron gain enthalpy
The total number of above properties that affect the reduction potential is
49. Nucleus of an element contains 9 protons. Its valency would be
50. Given below are the oxides:
 Na_2O, As_2O_3, N_2O, NO and Cl_2O_7
Number of amphoteric oxides is

----- ** BEST OF YOUR KNOWLEDGE ** -----

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