

- Dalton atomic theory could not explain about
 - Law of conservation of mass
 - Law of constant proportion
 - Isotopes & Isobars
 - Law of multiple proportion
- According to modern atomic theory atom is
 - Indivisible
 - smallest unit of element that cannot enter into chemical reaction
 - Invisible
 - Divisible contain sub atomic particle
- Charge of one proton is $1.6 \times 10^{-19} C$. Find the charge of He^{2+} ion in coulombs
 - 1.67×10^{-24}
 - 1.6×10^{-19}
 - 3.2×10^{-19}
 - 9.1×10^{-27}
- Absolute mass of Hydrogen atom in grams is
 - 1
 - 1.6×10^{-19}
 - 1.67×10^{-24}
 - 9.1×10^{-27}
- O^{2-} has
 - 8e 8p
 - 10e 8p
 - 6e 8p
 - 8e 6p
- Isotopes have different
 - number of electrons
 - number of protons
 - electronic configuration
 - Number of neutrons
- ${}_{25}X^{55}$ and ${}_{26}X^{56}$ are
 - Isotopes
 - Isobars
 - Isoelectronic
 - Isotones
- Ca^{2+} and K^{+} are isoelectronic to
 - Cl^{-}
 - S^{-}
 - P^{-}
 - F^{-}
- O^{-} is isoelectronic to
 - N^{2-}
 - F^{-}
 - Ne
 - C^{4-}
- Identify the isoelectronic pair
 - NO, CO
 - N_2, O_2
 - N_2, CO_2
 - N_2, CO
- An element X has 14 neutrons in the nucleus. Atomic mass of X is 27. The stable ion formed by X is
 - X^{3+}
 - X^{2+}
 - X^{-1}
 - X^{-2}
- Molecular mass of glucose in amu unit
 - 100
 - 180
 - 120
 - 60
- Avg-atomic mass of an element "A" is 41.5. It has two isotopes of masses 40 and 42. % of isotope with mass 42 is
 - 25%
 - 75%
 - 30%
 - 70%

14. An element 'X' has two isotopes of masses 13 and 14. They exist in nature in 1 : 9 ratio respectively. Avg mass is
- a) 13.1 b) 13.09 c) 13.5 d) 13.9
15. The number of electrons present in d-subshell of Mn^{2+} ion is equal to the number of electrons present in d-subshell of
- a) Cr^{2+} b) Zn^{2+} c) Ni^{2+} d) Fe^{3+}
16. Total number of e^{-} present in outer most orbital of Zn^{2+} ion is
- a) 8 b) 18 c) 10 d) 2
17. An element X when forms X^{3-} ion has $10e^{-}$ in the anion. X is
- a) Oxygen b) Carbon c) Nitrogen d) Fluorine
18. The valence electrons in calcium are present in _____ shell
- a) 1st b) 2nd c) 3rd d) 4th
19. Which of the following pairs has different electronic configuration
- a) ${}_6C^{12}$ ${}_6C^{13}$ b) ${}_8O^{18}$ ${}_8O^{16}$ c) ${}_7N^{14}$ ${}_6C^{14}$ d) ${}_5B^{10}$ ${}_5B^{11}$
20. The ratio between number of neutrons in C – 12, C – 13 & C – 14 is
- a) 6 : 5 : 4 b) 6 : 7 : 8 c) 7 : 8 : 9 d) 9 : 10 : 11
21. The total number of electrons in p and d subshell of chromium atom respectively is
- a) 5, 12 b) 12, 5 c) 6, 10 d) 10, 6
22. Molecular mass ratio of one of the following pairs is 1 : 1. Identify that pair
- a) H_2SO_4, H_3PO_4 b) H_2O, H_2O_2 c) CO_2, SO_2 d) HNO_3, H_2SO_3
23. X^{3-}, Y^{2-}, Z^{-} are isoelectronic. Have 18 electrons in each ion. Identify X, Y, Z
- a) K, Ca, Ar b) P, S, Cl c) P, S, Ca d) Ar, S, K
24. Absolute mass of C – 12 atom is _____ (Note $1\text{amu} = 1.6 \times 10^{-24}\text{gm}$)
- a) 19.2×10^{-24} b) 192×10^{-24} c) 192×10^{-23} d) 19.2×10^{-23}
25. The natural abundance of isotopes of an element X is 1 : 3. Isotopes masses are 10 and 11 respectively. Find the avg mass.
- a) 10.8 b) 10.25 c) 10.5 d) 10.75
26. Molecular mass of a compound CX_4 is 154. Find atomic mass of X.
- a) 35.5 b) 35.25 c) 35.75 d) 35.65
27. Molecular mass of a compound of hydrogen with X is 72. 12 – H atoms and 5 – X atoms are present in one molecule of the compound. Find atomic mass of X.
- a) 10 b) 14 c) 16 d) 12
28. In ${}_{58}C^{142}$ the number of electrons, protons and neutrons respectively are
- a) 142, 142, 58 b) 58, 58, 142 c) 58, 58, 84 d) 84, 84, 142

29. Which of the following atoms have 6 neutron in it
- (i) ${}_7N^{14}$ (ii) ${}_4Be^9$ (iii) ${}_6C^{12}$ (iv) ${}_5B^{11}$
- a) I, II, III b) III, IV c) II, IV d) II, III, IV
30. Electronic configuration of X is 2 8 6
Electronic configuration of Y is 2 8 8 2
The formula of compound formed from X and Y is
- a) XY b) YX c) Y_2X_3 d) X_2Y_3
31. Maximum number of electrons that can be present in *s*, *p* and *d* sub-shell respectively
- a) 2,6,10 b) 4,8,16 c) 3,6,12 d) 5,10,15
32. How many electrons and protons are present in Al^{3+} ion
- a) 13e, 13p b) 10e, 10p c) 13e, 10p d) 10e, 13p
33. Some electronic configuration is present in
- (i) ${}_1H^1, {}_1H^2, {}_1H^3$ (ii) Na^+, Mg^+, Al^{3+} (iii) ${}_7N^{14}, {}_7C^{14}, {}_5B^{14}$ (iv) Ar, Ne, He
- a) I, III b) II, IV c) I, II d) III, IV
34. The maximum number of electron can be present in 6th orbit is
- a) 36 b) 12 c) 18 d) 72
35. The energy of orbital _____ as we move away from the nucleus
- a) Increases b) Decreases
c) First Increase then decrease d) First decrease then increase
36. Tritium is isobar of
- a) ${}_2He^4$ b) ${}_2He^3$ c) ${}_3Li^7$ d) ${}_3Li^6$
37. Number of neutrons in isotopes of Chlorine ($Cl - 35$ & $Cl - 37$) are in ratio of
- a) 8 : 9 b) 9 : 10 c) 10 : 11 d) 11 : 12
38. An anion X^{2-} is isoelectronic with H_2O molecules X is
- a) Carbon b) Nitrogen c) Sulphur d) Oxygen
39. X has two isotopes of masses 236 and 238. The neutron number ratio is 72 : 73 respectively. Find the atomic number of the element X
- a) 90 b) 91 c) 92 d) 93
40. The valence shell electronic configuration of an element is $3S^2$. The element is
- a) Ne b) Na c) Mg d) Al

KEY

1. C	2. D	3. C	4. C	5. B	6. D	7. D	8. A	9. A	10. D
11. A	12. B	13. B	14. D	15. D	16. B	17. C	18. D	19. C	20. B
21. B	22. A	23. B	24. A	25. D	26. A	27. D	28. C	29. B	30. B
31. A	32. D	33. C	34. D	35. A	36. B	37. B	38. D	39. C	40. C