



CHEMISTRY NMDCAT

(UNIT-2)

TOPICS

✓ Atomic Structure

- Q.1 Nature of canal rays depends upon**
 A. Composition of glass
 B. Composition of electrode
 C. Gas inside the discharge tube
 D. All of these
- Q.2 The deflection of positive rays in magnetic field will be**
 A. Toward north pole
 B. Toward south pole
 C. Toward cathode
 D. Perpendicular to magnetic field
- Q.3 Highest value of charge/ mass ration is expected for _____ gas. Assuming +1 charge**
 A. H_2
 B. He
 C. N_2
 D. O_2
- Q.4 Which of the following is not true for canal rays?**
 A. Travel in straight line opposite to cathode rays
 B. Can't ionize the gas
 C. Produce glow, when strike with glass
 D. Carry positive charge
- Q.5 The mass of hydrogen gas (H_2) will be**
 A. Equal to mass of proton
 B. Half of mass of proton
 C. Twice as that of mass of proton
 D. Four times of mass of proton
- Q.6 The e/m of which pair will be same**
 A. H_2^+ , He^+
 B. N_2^+ , CO^+
 C. NH_3^+ , O_2^+
 D. O_2^+ , SO_2^+
- Q.7 A tri-positive cation has 10e- and 27 nucleon number. No of neutron in ion will be**
 A. 12
 B. 13
 C. 14
 D. 15
- Q.8 A hypothetical element carrying -2 charge contain 27e- and 50 mass number. Its atomic number will be**
 A. 25
 B. 26
 C. 27
 D. 24
- Q.9 Which of the following statement is true about mass no**
 A. Mass number = number of protons+ number of electrons
 B. Mass number = (number of protons) \times 2
 C. Mass number = number of protons + number of neutrons
 D. Mass number = (number of neutrons) \times 2
- Q.10 If an ion is carrying positive charge then which of the following must be true?**
 A. No of proton = no of electron
 B. No of proton > no of neutron
 C. No of proton > no of electron
 D. No of proton < no of electron
- Q.11 Which of the following order is true with respect to mass number?**
 A. $H^- > H > H^+$
 B. $H^+ > H^- > H$
 C. $H > H^- > H^+$
 D. $H^- = H = H^+$
- Q.12 SO_4^{2-} and PO_4^{3-} have same**
 A. Nuclear number
 B. Number of electron
 C. Number of proton
 D. Number of neutron
- Q.13 Mass of proton is**
 A. $1.6726 \times 10^{-27}g$
 B. $1.6726 \times 10^{-24}Kg$
 C. $1.6726 \times 10^{-21}mg$
 D. $1.6726 \times 10^{-24}mg$
- Q.14 Charge on 1 mole of proton is**
 A. 96500C
 B. $+1.6022 \times 10^{-19} C$
 C. $1.7588 \times 10^{11} C$
 D. $9.1095 \times 10^{16} C$
- Q.15 Mass of one mole of proton is approximately equal to**
 A. 1.0073 amu
 B. 1.008 g
 C. 1.0073 amu
 D. $1.6726 \times 10^{-24}g$



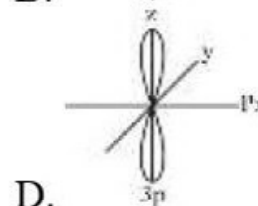
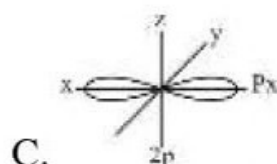
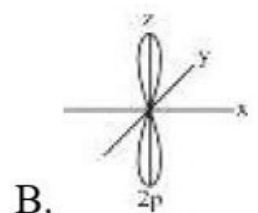
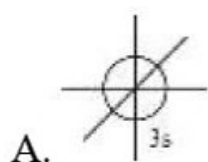
- Q.16** Which of the following particle is expected to have minimum e/m ratio?
 A. Electron
 B. Proton
 C. Neutron
 D. Helium
- Q.17** I of indigo color is 400nm approximately. The wave number of above-mentioned color will be.
 A. $400 \times 10^{-9} \text{ m}^{-1}$
 B. $2.5 \times 10^{-6} \text{ m}^{-1}$
 C. $2.5 \times 10^{-5} \text{ m}^{-1}$
 D. $2.5 \times 10^{-4} \text{ m}^{-1}$
- Q.18** Number of waves per unit length is called
 A. Frequency
 B. Wave length
 C. Wave crust
 D. Wave number
- Q.19** A photon of greater wavelength will have
 A. Greater frequency
 B. Greater energy
 C. Smaller wave number
 D. Greater wave number
- Q.20** The quantum of energy is called photon in case of
 A. Heat
 B. Sound
 C. Wave
 D. Light
- Q.21** S.I units of wave number are
 A. m^{-1}
 B. m
 C. A°
 D. nm
- Q.22** The ratio between energy and frequency of photon is
 A. Wave number of photon
 B. Wave length of photon
 C. Speed of photon
 D. Plank's constant
- Q.23** Number of subshells and orbitals in N-shell are _____ and _____ respectively
 A. 4, 4
 B. 4, 8
 C. 4, 12
 D. 4, 16
- Q.24** Shapes of orbitals were explained by
 A. Principal quantum number
 B. Azimuthal quantum number
 C. Magnetic quantum number
 D. Spin quantum number
- Q.25** s, p, d and f represent _____ respectively
 A. Spherical, principal, diffused, fundamental
 B. Sharp, principal, diffused, fundamental
 C. Sharp, principal, dispersed, fundamental
 D. Sharp, principal, dumb-bell, fundamental
- Q.26** Which of the following is true relationship between principal and azimuthal quantum number?
 A. $n = l$
 B. $n > l$
 C. $n < l$
 D. $n = \pm l$
- Q.27** Number of subshells in a shell are determined by using
 A. n
 B. $2n^2$
 C. n^2
 D. $n^2/2$
- Q.28** The simplest shape is associated with
 A. s-orbital
 B. p-orbital
 C. d-orbital
 D. f-orbital
- Q.29** The electronic configuration of magnesium is given below $12\text{Mg} = 1s^2 2s^2 2p^6 3s^2$
 Maximum number of electrons in p-orbital of magnesium are
 A. 2
 B. 4
 C. 6
 D. 8
- Q.30** The correct set of quantum number for valance electron of Na is
 A. $n = 3$ $l = 2$ $m = 0$ $s = +1/2$
 B. $n = 3$ $l = 0$ $m = 0$ $s = +1/2$
 A. $n = 3$ $l = 2$ $m = 0$ $s = -1/2$
 A. $n = 3$ $l = 2$ $m = +1$ $s = +1/2$
- Q.31** When an atom goes in excited state it violates
 A. Auf Ban principal
 B. Hund's rule
 C. Pauli's exclusion principal
 D. All of these



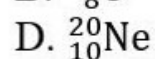
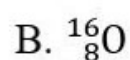
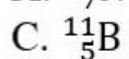
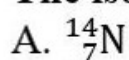
- Q.32** The electronic configuration of which element can be written without hand's rule
A. C B. N
C. O D. F
- Q.33** Minimum number of electrons in N-shell are
A. ${}_{22}\text{Ti}$ B. ${}_{23}\text{V}$
C. ${}_{24}\text{Cr}$ D. ${}_{25}\text{Mn}$
- Q.34** Electron will be placed first in
A. 7s B. 6p
C. 5d D. 4f
- Q.35** Number of electron in Ne with $s = +1/2$ are
A. 1 B. 1
C. 5 D. 10
- Q.36** How many orbitals having electrons will be present in an atom with atomic number 29?
A. 10 B. 15
C. 20 D. 29
- Q.37** Number of electrons in the subshell can be determined by using formula
A. $2(2l + 1)$ B. $2n^2$
C. n^2 D. $2l + 1$
- Q.38** The electrons in helium can be distinguished by
A. Principal quantum number B. Azimuthal quantum number
C. Magnetic quantum number D. Spin quantum number
- Q.39** The probability of finding an electron at nodal plane is
A. 1% B. 5%
C. 95% D. 0%
- Q.40** 2p and 3p can have same
A. Energy B. Size
C. Number of electron D. Quantum number
- Q.41** Atoms of two different elements having same nucleon number but different proton number are called
A. Isotopes B. Isotones
C. Isobars D. Isoelectronic
- Q.42** General electronic configuration of p-block elements are given, Which of the following element has maximum first ionization energy
A. ns^2, np^2 B. ns^2, np^3
C. ns^2, np^4 D. ns^2, np^1
- Q.43** A di-valent cation having 10 electrons and 24 nucleon number. The number of neutrons is
A. 11 B. 12
C. 10 D. 24
- Q.44** An unknown element having electronic configuration $[\text{Ne}] 3s^2, 3p^3$ can form
A. Uni-negative ion B. Tri-Negative ion
C. Di-Positive ion D. Uni-positive ion
- Q.45** The _____ quantum number explains the shapes of orbitals
A. Principal B. Magnetic
C. Azimuthal D. Spin
- Q.46** Which of following violates Hund's rule
A. $1s^2, 2s^2, 2p_x^1, 2p_y^1, 2p_z^0$ B. $1s^2, 2s^2, 2p_x^2, 2p_y^0, 2p_z^0$
C. $1s^2, 2s^2, 2p_x^2, 2p_y^2, 2p_z^2$ D. $1s^2, 2s^1$
- Q.47** The number of unpaired electrons in the carbon atom in ground state
A. 4 B. 2
C. 3 D. 1
- Q.48** The charge on proton is
A. $-1.6 \times 10^{-31} \text{ C}$ B. $1.6 \times 10^{-31} \text{ C}$
C. $-1.6 \times 10^{-19} \text{ C}$ D. $+1.6 \times 10^{-19} \text{ C}$



Q.49 Which orbital correctly represents the last electron in the element of VII-A group and 3rd period



Q.50 The isotone of C-14 is



Q	A	Q	A	Q	A	Q	A	Q	A
1	C	11	D	21	A	31	A	41	B
2	D	12	B	22	D	32	D	42	C
3	A	13	C	23	D	33	C	43	C
4	B	14	A	24	B	34	D	44	C
5	C	15	C	25	B	35	C	45	B
6	B	16	C	26	B	36	B	46	C
7	C	17	B	27	A	37	A	47	C
8	A	18	D	28	A	38	D	48	D
9	C	19	C	29	A	39	D	49	D
10	C	20	D	30	B	40	C	50	C