KIPS ENTRY TESTS PREPARATION

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) × 2
C. Mass number = number of protons + number of neutrons
D. Mass number = (number of neutrons) × 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. 1.6726×10^{-27}g
B. 1.6726×10^{-24}Kg
C. 1.6726×10^{-21}mg
D. 1.6726×10^{-24}mg

Q.14 Charge on 1 mole of proton is

A. 96500C
B. $+1.6022 \times 10^{-19}$ C
C. 1.7588×10^{11} C
D. 9.1095×10^{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. 1.6726×10^{-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. $400 \times 10^{-9}\ m^{-1}$ B. $2.5 \times 10^{-6}\ m^{-1}$
C. $2.5 \times 10^{-5}\ m^{-1}$ D. $2.5 \times 10^{-4}\ m^{-1}$

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 $12Mg = 1s^2\ 2s^2\ 2p^6\ 3s^2$ 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 I = 2 m = 0 s = +1/2 B. n = 3 I = 0 m = 0 s = +1/2
A. n = 3 I = 2 m = 0 s = -1/2 A. n = 3 I = 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. $_{22}Ti$
B. $_{23}V$
C. $_{24}Cr$
D. $_{25}Mn$

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 [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. $1s^2, 2s^2, 2px^1, 2py^1, 2pz^0$
B. $1s^2, 2s^2, 2px^2, 2py^0\ 2pz^0$
C. $1s^2, 2s^2, 2px^2, 2py^2, 2pz^2$
D. $1s^2, 2s^1$

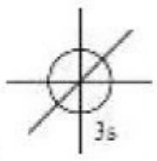
Q.47 The number of unpaired electrons in the carbon atom in ground state

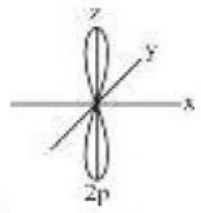
A. 4
B. 2
C. 3
D. 1

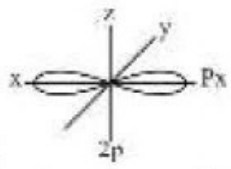
Q.48 The charge on proton is

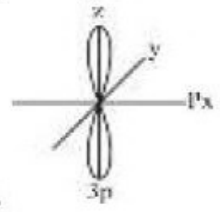
A. -1.6×10^{-31} C
B. 1.6×10^{-31} C
C. -1.6×10^{-19} C
D. $+1.6 \times 10^{-19}$ C

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

A. 

B. 

C. 

D. 

Q.50 The isotone of C-14 is

A. $^{14}_{7}N$

B. $^{16}_{8}O$

C. $^{11}_{5}B$

D. $^{20}_{10}Ne$

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