Chemical bonding

Formation of Hydrogen molecule according to VBT theory involves overlap of

A. 1s orbital
B. 2s orbital
C. 2p orbital
D. 2px orbital

Those elements, with electronic configuration of valence shell ns2np6 show little tendency to react chemically, are called

A. lanthanides
B. Actinides
C. Alkali metals
. Noble gases

In aluminum oxide ,ions are present in the ratio 2:3, its formula in

A. AlO
B. Al2O
C. Al2O3
D. Al3O2

The valency of an atom will be one if there is a sufficient gap b/w first and second

A. electron affinity
B. ionization energy
C. electronegativity
D. none of these

When we move from left to right in transition elements, the decrease is ___due to intervening electrons

A. large
B. very large
C. small
D. very small

The minimum amount of energy required to remove an electron from its gaseous atom to form an ion is known as

A. electron affinity
B. ionization energy
C. electronegativity
D. potential energy

the transfer of electron from an atm of _____ I.E to other atom with ___E.A is called ionic bond by Lewis

A. high, low
B. low, low
C. low, high
D. high,high

The elements with intermediate value of ionization energy value are called

A. metals
B. non metals
C. metalloid
D. transition elements

A bonding electron pairs of is attracted by _of atoms

A. one nucleus
B. both nuclei of atoms
C. lone pair
D. shared pair of electron

When an electron is added, energy is released, so electron affinity is given the

A. positive sign
B. negative
C. neutral
D. delta sign

Greater the amount of negative charge on an atom, the size of ion will also be

A. smaller
B. greater
C. higher
D. lower

The electronic configuration of Ne-1 is

A. 1s2,2s2,2px2,2py2,2pz2
B. 1s2,2s2,2px2,
C. 1s2,2s2,2px2,2py1
D. 1s2,2s2,2px2,2px2,2pz1

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Chemical bonding

If the difference of electronegativity is 1.7 or more than that, the bond formed is said to be

A.Ionic bond

B.covalent bond

C.metallic bond

D.chemical bond

In energy terms, the elements at high energy state are

A. electronegative elements

B. electropositive

C. neutral elements

D. charged elements

Which of the following properties is not related to transition metals _____?

A. Complex formation

B. Color

C. Fixed valency

D. d-orbital

The shielding effect _____ from left to right in a period

A. decreases

B. increases

C. remains

D. no chang

Energy is __when an electron is added to the isolated gaseous atom

A. increased

B. released

C. decreased

D. absorbed

the tendency of of an atom to attract a shared electron pair towards itself is called

A. electron affinity

B. ionization energy

C. electronegativity

D. polarity

BH3 has a geometry with H-B-H bond angles of 12

A. linear

B. trigonal planar

C. tetrahedron

D. bent

In CCl4 ,all C-CL bonds are _____ but molecule is __overall

A. polar,nonpolar

B. nonpolar.neutral

C. polar. Neutral

D. neutral, on polar

The increase in atomic radii in _-----is due to increase in the number of shells and the screening effect

A. groups

B. periods

C. both A & B

D. none of these

The formation of coordination complex compounds formed by transition metals is explained by

A. Ligand field theory

B. crystal field theory

C. molecular orbital theory

D. both A & B

Metals have ionization energy value

A. Low

B. high

C. intermediate

D. neutral

The second ionization energy value of magnesium ion after the removal of second electron is

A. 135 KJ/mol

B. 145 KJ/mol

C. 155 KJ/mol

D. 773 KJ/mol

Metals have ionization energy value

A. Low

B. high

C. intermediate

D. neutral

In some cases during atomic orbital hybridization, ground state electrons promoted to excited states , as a result __increases

A. number of shells

Chemical bonding

B. number of electrons
C. number of unpaired
D. number of bonds

Electron affinity of an atom is the energy released when an electron _to an empty or partially filled orbital of an atom to form___
A. removed,cation
B. added,cation
C. added, anion
D. removed, anion

It is very _--to remove electron from a positively charged ion than a neutral atom due to increase in nuclear charge
A. easy
difficult
C. moderate
D. none of these

The shielding effect _____ from left to right in a period
A. decreases
B. increases
C. remains
D. no change

In chemical combination of H-atom with sodium. It gains an electron but in case of HF,H-atom
A. gains 2 e-
B. lose 1e-
C. lose 2e-
D. gain 2e-

Sulphur-16 gets its stabilization by gaining 2 electron to become equal to
A. neon
B. argon
C. helium
D. krypton

The good electron loser elements belongs to group
A. 1A
B. 2A
C. 3A
D. 4A

According to VSEPR theory ,the repulsions are called
A. joule repulsion
B. planks repulsion
C. Van der waals repulsion
D. J.J.Thomson repulsion

Who was able to determine the distance b/w K+ and Cl- in potassium chloride crystal`
A. Bohr's
B. Pauling
C. Berzelius
D. Rutherford

The increase in size of an anion is due to increase in repulsion of
A. electron-proton
B. electron-electron
C. electron-nucleus
D. proton-nucleus

The unit of electron affinity is
A. J/mol
B. KJ/mol
C. KJ/atom
D. J/atom

The gap in first, second and third ionization energy values helps to guess
A. atomic number of an element
B. valency of an element
C. charge on an atom
D. atomic mass of an element

Themolecular geometry of SO2 is
A. annular
B. ring
C. angular
D. linear

A _ bond may be polar or nonpolar
A. Ionic bond
B. covalent bond
C. metallic bond
D. co-ordinate bond

Chemical bonding

The probability of finding an electron _____ even at large distances from the nucleus
A. becomes one
B. becomes zero
C. never becomes
D. varies from to 1

The ionic radius of an ion is the radius of the ion while considering it to be _in shape
A. oval
B. round
C. rectangular
D. spherical

All elements get their stabilization to attain nearest ____configuration
A. alkali metals
B. noble metals
C. alkaloids
D. Noble gases

As far as nuclear charge increases, the decrease in ionic radii will also
A. larger
B. smaller
C. remains same
D. moderate

The valence electron pairs are arranged around the central atom to remain at maximum distance apart to keep repulsion
A. maximum
B. moderate
C. zero
D. minimum

The chemical reactivities of elements, depend upon their characteristics electronic_____
A. shields
B. forces
C.
D. Shells

The ionic radius is always _____than the atomic radius from which t is derived
A. higher
B. larger
C. moderate
D. smaller

Ionization energies of atoms depends upon the factors
A. atomic radius of atoms
B. nature of orbital
C. shielding effect of inner electrons
D. all of these

The electron affinity and atomic radius are _____to each other
A. directly proportional

C. no effect
D. remains constant

In the formation of HF, _____ donates the major of its electron among hydrogen atom or fluorine atom
A. H-atom
B. F-atom
C. both A & B
D. none of these

Potassium has electronic configuration (2,8,8,1)and become ion by attaining configuration
A. 2.8.8.2
B. 2,8,8,
C. 2,8,1
D. 2,8,8,8

The molecules like CH4,CCl4 or SiH4 show attitude of non-polarity due to
A. structure
B. symmetry of structure
C. nature of structure
D. charges on structure

Nitrogen N2 molecule has 3 unpaired electron on each atom therefore it shows three bond that are
A. 2 sigma & 1 pi bond
B. 1 sigma & 2
C. 3 sigma
D. 3 pi bond

The elements of which group show abnormally very low values of electron affinity in every period of periodic table

Chemical bonding

A. group 2A
B. group 5A
C. both A & B
D. none of these

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Nyholm & Gillespie explains the shapes of molecules for
A. transition elements
B. non transition elements
C. only alkali metals
D. Alkaline earth metals

Electron affinity is the measure of ____ for extra electron
A. repulsion of electron
B. attraction of electron
C. attraction of nucleus
D. repulsion of nucleus

The total number of bond angles in methane are
A. 2
B. 3
C. 5
D. 4

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In general, atomic radii decreases from left to right in a period, due to increase in
A. number of shells
B. nuclear charge
C. shielding effect
D. bond length

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The bonding pair of electron are equally shared b/w the atoms in
A. HF
B. HCl
C. H2O
D. H2

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B. increases
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Chemical bonding

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C. both A & B
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The formation of coordination complex compounds formed by transition metals is explained by
A. Ligand field theory
B. crystal field theory
C. molecular orbital theory
D. both A & B

Metals have ionization energy value
A. Low
B. high
C. intermediate
D. neutral

The decrease in atomic radii is very prominent in
A. second group
B. second period
C. higher groups
D. higher periods

Different type of hybridization takes place depending upon _____of orbital's participating in hybridization
A. number
B. nature
C. structure
D. both A & B

The unit of electronegativity is
A. Joule
B. Kilojoules
C. watt
D. no unit

Which will need maximum energy to remove its one electron?
A. Na → Na+ + e-
B. Ca →ca++ + e-
C. K → K++ + e-
D. c2+ → c3+ + e-

_____is used to measure atomic radii
A. Gamma rays
B. alpha rays
C. X-rays
D. beta rays

When an atom shares more than one electrons, the bond formed is
A. single bond
B. double bond
C. triple bond
D. both B & C

BF3 is an electron pair acceptor and complete its octet by accepting
A. an electron
B. pair of electron
C. 3 electron
D. 4 electron

Which of the following remains the same in a period
A. nuclear charge
B. number of electrons
C. shielding effe
D. ionization energy

The bond formed b/w homonuclear diatomic molecule is ___in nature
A. polar
B. non-polar
C. may be polar or nonpolar
D. ionic

The electron affinity of fluorine is less than chlorine as we move down the group, this deviation in behavior is due to its
A. small size
B. seven electron

Chemical bonding

C. thick electronic cloud
D. all of these

Intervening electrons have a negative charge which repulses other electrons and ___attraction b/w nucleus and electrons
A. blocks
B. reduces
C. increases
D. enhances

The electronegativity difference of the elements can be related to the following property of bonds
A. dipole moment
B. bond energies
C. both A & B
D. none of these

The outermost s and p orbitals of Noble gases are completely filled that why they are
A. stable, reactive
B. stable ,uncreative
C. unstable, reactive
D. unstable ,uncreative

The ionic radii appeared to be a/an property
A. associative
B. multiplicative
C. additive
D. all of these

The amount of energy evolved during the formation of hydrogen molecule is
A. 436.45 KJ/mol
B. 444.45 J/mol
C. 436.45 J/mol
D. 444.45 KJ/Mol

The energy released during the formation of crystal lattice of KCl is
A. 39 KJ/mol
B. 49 KJ/mol
C. 59 KJ/mol
D. 69 KJ/mol

The four C-H bond of methane are formed by overlap of
A. sp3-s
B. sp2-s2
C. sp3-s2
D. sp3-sp3

The bond formed b/w NH3 and BF3 is co-ordinate bond because NH3 _____ due to presence of one lone pair
A.acceptor
B.donor
C.neutral
D.negatively charged

Aluminum, has 3 electrons in its valence shell, therefore it has the ability to form ion
A. monovalent
B. divalent
C. trivalent
D. tetravalent

The bond formed by the complete transfer of electron is called
A. ionic bond
B. covalent bond
C. metallic bond
D. polar covalent bond

The ionization energy of group __shows abnormal trend
A. 3A & 4A
B. 5A & 6A
C. 6A & 4A
D. 3A & 6A

In some cases during atomic orbital hybridization, ground state electrons promoted to excited states , as a result __increases
A. number of shells
B. number of electrons
C. number of unpaired electrons
D. number of bonds

Chemical bonding

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B. added,cation
C. added, anion
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It is very _--to remove electron from a positively charged ion than a neutral atom due to increase in nuclear charge
A. easy
B difficult
C. moderate
D. none of these

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