TEST

Self Assessment Test (Unit-3)

50 Questions

40 min

Topics

SAT Unit (3A. Atomic Structure & 4A. Chemical Bonding)

Start Test

39 : 58

Q 1/50 40 min Hint

Q : Charge on 1kg of electrons is

A $9.1095\times10^{-31}C$

B $1.602\times10^{-19}C$

C $1.7588\times10^{11}C$

D 1

39 : 57

Q 2/50 40 min Hint

Q : The mass of neutron is

A 1.675×10^{-27} kg

B 1.0087amu

C 1.675×10^{-24}g

D All of these

39 : 55

Q 3/50 40 min Hint

Q : The e/m value of He^{+1} ion in comparison to e/m value of electron is

A 7344 times lesser

B 1836 times lesser

C 1836 times greater

D 7344 times greater

39 : 54

Q 4/50 40 min Hint

Q : What will be the effect on electron when passed through the electric field

A Deflection towards anode

B Deflection towards cathode

C Deflection perpendicular to electric field

D Deflection downwards in electric field

39 : 53

Q 5/50 40 min Hint

Q : X specie carry +3 charge and number of electron and neutrons are 10 and 14 respectively. What is the atomic mass of X

A 24

B 27

C 21

D 17

1 2 3 4 5 6 7

39 : 52

Q 6/50 40 min Hint

Q : Which of the followings set of ions is isoelectronic

A Sc^{+3}, Ca^{+2}, S^{-2}

B H^-, H and H^+

C F^-, Ne and Na

D Li^+, Na^+ K^+

39 : 50

Q 7/50 40 min Hint

Q : Which of the following particles would on losing an electron has its outermost p-orbital as half filled

A N atom

B O^{+} ion

C P^{-1} ion

D S^{+1} ion

38 : 48

Q 8/50 40 min Hint

Q : Isotopes differ in

A Properties with respect to their mass number

B Properties with respect to their proton number

C Properties of with respect to their atomic number

D With respect to chemical properties

38 : 47

Q 9/50 40 min Hint

Q : Which property is same for two nuclides $^{40}_{18}Ar$ and $^{40}_{19}K$

A Number of electrons

B Number of nucleons

C Number of neutrons

D Number of protons

38 : 46

Q 10/50 40 min Hint

Q : The correct set of four quantum numbers for the valence electron of potassium (Z = 19) is

A n = 4, l = 0, m = 0 and s = +1/2

B n = 4, l = 1, m = 1 and s = +1/2

C n = 4, l = 1, m = 0 and s = +1/2

D n = 3, l = 0, m = 0 and s = +1/2

38 : 44

Q 11/50 40 min Hint

Q : Identify the correct order of decreasing energy

A 3s > 2s > 1s

B 2s > 3s > 1s

C 1s > 2s > 3s

D 1s > 3s > 2s

38 : 43

Q 12/50 40 min Hint

Q : Correct number of degenerate orbitals

A p = 6, d = 10, f = 14

B p = 1, d = 2, f = 3

C p = 3, d = 5, f = 7

D p = 3, d = 7, f = 5

38 : 42

Q 13/50 40 min Hint

Q : The maximum number of electrons in subshell can be calculated by using formula

A $2l + 1$

B $2n^2$

C **$2(2l+1)$**

D $n + l$

38 : 41

Q 14/50 40 min Hint

Q : The incorrect statement about d-orbitals

A It is not present in first two principal energy levels

B They are associated with only transition elements

C They are five degenerate orbitals in d-subshell

D p-orbitals are filled before d-orbitals in the same principal energy level

38 : 38

Q 15/50 40 min Hint

Q : Valence electron of K has _____ value for spin quantum number with _____ spin

A $+\frac{1}{2}$, clockwise

B $+\frac{1}{2}$, anticlockwise

C $-\frac{1}{2}$, clockwise

D $-\frac{1}{2}$, anticlockwise

Q 16/50 40 min Hint

Q : Fourth shell can accommodate 32 electrons how many electron can be placed in 5^{th} shell

A 42

B 40

C 50

D 60

38 : 35

Q 17/50 40 min Hint

Q : The correct set of quantum numbers is

A $n = 2, \quad \ell = 2, \quad m = 0, \quad s = +\frac{1}{2}$

B $n = 2, \quad \ell = 1, \quad m = 0, \quad s = +\frac{1}{2}$

C $n = 2, \quad \ell = 1, \quad m = -2, \quad s = +\frac{1}{2}$

D $n = 2, \quad \ell = 1, \quad m = -2, \quad s = 0$

38 : 32

Q 18/50 40 min Hint

Q : The place between two orbitals where probability for finding the electron is zero known as

A Anti orbital

B Atomic hole

C Nodal plane

D Orbital

38 : 31

Q 19/50 40 min Hint

Q : The shapes of s orbitals is circular and their size:

A Increases with the increase in principal quantum number

B Decreases with the increase in principal quantum number

C Remains the same with the change in principal quantum number

D Increase with the increase in Azimuthal quantum number value

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Q : The electronic configuration of P(15) is

A $1s^2, 2s^2, 2p^6, 3s^2, 3p_x^1, 3p_y^2, 3p_z^0$

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C $1s^2, 2s^2, 2p^6, 3s^2, 3p_x^0, 3p_y^1, 3p_z^2$

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38 : 28

Q 21/50 40 min Hint

Q : The number of d-electrons in Fe^{+2} (Z = 26) is not equal to

A p electrons in Ne (Z = 10)

B d electrons in Fe (Z = 26)

C s electrons in Mg (Z = 12)

D p electrons in Ar (Z = 18)

38 : 27

Q 22/50 40 min Hint

Q : The rule for filling electrons in subshells of atoms is

A Aufbau's principle

B Hund's rule

C Pauli exclusion principle

D All of these

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Q : When 6d orbital is completed the entering electron goes into

A 7f

B 7p

C 7s

D 7d

38 : 23

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Q : Number of orbitals required to place all electrons of an element with atomic number 30

A 13

B 15

C 9

D Can’t be predicted

21 22 23 24 25 26

38 : 22

Q 25/50 40 min Hint

Q : Which of the following has 5 unpaired electron in d sub-shell

A $_{25}Mn^{+2}$

B $_{26}Fe^{+3}$

C $_{24}Cr^{+1}$

D All of these

21 22 23 24 25 26

38 : 21

Q 26/50 40 min Hint

Q : 2nd ionization energy of Mg is higher than the first because

A Metallic character of Mg^{+1} is less than that of Mg

B Nuclear pull for Mg^{+1} electrons is more than that for the Mg atom

C Size of Mg^{+1} is greater than Mg^{+2}

D Nature of orbital of Mg^{+1} is different from Mg

38 : 19

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Q : Arrange following according to correct trend of 1st ionization energies: Na, Mg, Al, P, S

A Na < Mg < Al < P < S

B Na < Mg < Al < S < P

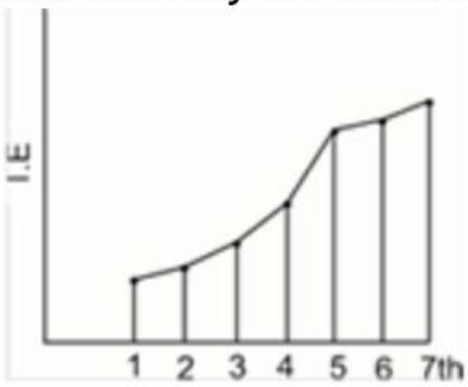
C Na < Al < Mg < S < P

D Na < Al < Mg < P < S

38 : 18

Q 28/50 40 min Hint

Q : Following graph represents successive ionization energies of an element. Choose the valency of element.



A 4

B 6

C 5

23 24 25 26 27 28 29

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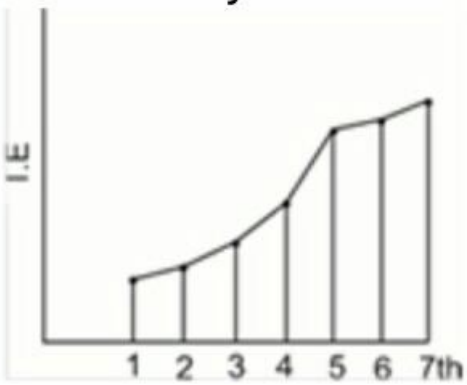

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C 5

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Q : Second electron affinity value is always with positive sign. It is due to repulsion of second incoming electron with

A Cation

B Atom

C Anion

D Molecule

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38 : 12

Q 30/50 40 min Hint

Q : Which one of the following has maximum electron affinity

A F

B Br

C Cl

D I

27 28 29 30 31 32

38 : 11

Q 31/50 40 min Hint

Q : Octet rule is followed by central atom in

A CCl_4

B BF_3

C SF_6

D PCl_5

38 : 09

Q 32/50 40 min Hint

Q : Orbital around single nucleus is called

A Atomic orbital

B Pi orbital

C Molecular orbital

D Sigma orbital

38 : 08

Q 33/50 40 min Hint

Q : Ionic compounds are obtained by the combination of elements of groups

A 3 and 5

B 1 and 7

C 2 and 5

D 4 and 8

38 : 07

Q 34/50 40 min Hint

Q : Which of the following molecule has non-directional bond(s)

A NH_3

B NaCl

C H_2O

D None of these

38 : 06

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Q : The bond formed between the atoms having electronegativity difference 1.70 is

A 50% ionic

B 50% covalent

C More than 50% ionic

D Both A and B

38 : 04

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Q : In a double bond connecting 2 atoms there is a sharing of

A 1 electron

B 2 electrons

C 3 electrons

D Two electron pairs

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Q 37/50 40 min Hint

Q : In BF_3 molecule, the F atom makes use of

A 2s orbital

B sp^2-hybrid orbitals

C 2p orbital

D 3s orbital

38 : 02

Q 38/50 40 min Hint

Q : Which of following molecules has all types of bonds except metallic bond

A AlF_3

B PH_4Cl

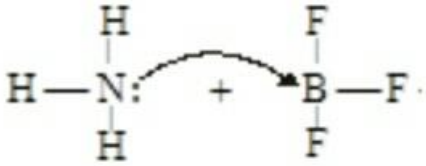
C NH_4^+

D NaCl

38 : 00

Q 39/50 40 min Hint

Q : Which information is incorrect for compound formed from given structure



A N carries positive charge

B B carries negative charge

C N and B will not complete their octet

D NH_3 is donor while BF_3 is accepter

37 : 59

Q 40/50 40 min Hint

Q : The shape of H_3O^+ is

A Tetrahedral

B Angular

C Pyramidal

D Trigonal planar

35 36 37 38 39 40

37 : 57

Q 41/50 40 min Hint

Q : Total number of valence electrons of nitrogen atom in ammonium ion is

A 6

B 10

C 8

D 16

37 : 56

Q 42/50 40 min Hint

Q : Which one of the following is linear molecule

A SO_2

B H_2S

C C_2H_4

D HCN

37 : 55

Q 43/50 40 min Hint

Q : The molecular geometry of H_2O is

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D Both A and B

37 38 39 40 41 42 43

37 : 53

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Q : Lateral overlapping is expected in

A Sigma bond

B Metallic bond

C Pi bond

D Ionic bond

37 : 52

Q 45/50 40 min Hint

Q : Total number of sigma electrons in one molecule of $HC \equiv CH$

A 3

B 4

C 6

D 8

40 41 42 43 44 45 4

37 : 51

Q 46/50 40 min Hint

Q : An organic molecule formed by chemical combination of two carbon atoms and four hydrogen atoms have

A $6\sigma, 0\pi$

B $1\sigma, 5\pi$

C $5\sigma, 1\pi$

D $4\sigma, 2\pi$

37 : 50

Q 47/50 40 min Hint

Q : In sp^3 hybridized orbital, the s character is:

A 25%

B 75%

C 50%

D 100%

42 43 44 45 46 47 48

37 : 48

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Q : Which of the following molecule is not planar

A Benzene

B Boron trichloride

C Ethene

D Phosphorous trichloride

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Q : On the basis of s– character which of following overlap results in a practically strongest bond

A $sp^2 - sp^2$

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D All have same

37 : 46

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Q : The carbon number 2 in the structure $^{1}CH_2 = {}^{2}CH - {}^{3}CH = {}^{4}CH_2$ shows a type of hybridization

A sp^3

B sp

C sp^2

D dsp^2

Correct Unattempted

Incorrect Q 1/50

Q : Charge on 1kg of electrons is

A $9.1095\times10^{-31}C$

B $1.602\times10^{-19}C$

C $1.7588\times10^{11}C$

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Correct | Unattempted

Incorrect | Q 2/50

Q : The mass of neutron is

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C 1.675×10^{-24}g

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Incorrect
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Q : The e/m value of He^{+1} ion in comparison to e/m value of electron is

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C 1836 times greater

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Self Assessment Test (Unit-3)

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Q 4/50

Q : What will be the effect on electron when passed through the electric field

A Deflection towards anode

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C Deflection perpendicular to electric field

D Deflection downwards in electric field

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Q 5/50

Q : X specie carry +3 charge and number of electron and neutrons are 10 and 14 respectively. What is the atomic mass of X

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Q 6/50

Q : Which of the followings set of ions is isoelectronic

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B H^-, H and H^+

C F^-, Ne and Na

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Q : Which of the following particles would on losing an electron has its outermost p-orbital as half filled

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Q : Isotopes differ in

A Properties with respect to their mass number

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C Properties of with respect to their atomic number

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Correct | Unattempted

Incorrect | Q 9/50

Q : Which property is same for two nuclides $^{40}_{18}Ar$ and $^{40}_{19}K$

A Number of electrons

B Number of nucleons

C Number of neutrons

D Number of protons

Correct Unattempted

Incorrect Q 10/50

Q : The correct set of four quantum numbers for the valence electron of potassium (Z = 19) is

A n = 4, l = 0, m = 0 and s = +1/2

B n = 4, l = 1, m = 1 and s = +1/2

C n = 4, l = 1, m = 0 and s = +1/2

D n = 3, l = 0, m = 0 and s = +1/2

Correct
Unattempted
Incorrect
Q 11/50

Q : Identify the correct order of decreasing energy

A 3s > 2s > 1s

B 2s > 3s > 1s

C 1s > 2s > 3s

D 1s > 3s > 2s

Correct | Unattempted

Incorrect | Q 12/50

Q : Correct number of degenerate orbitals

A p = 6, d = 10, f = 14

B p = 1, d = 2, f = 3

C p = 3, d = 5, f = 7

D p = 3, d = 7, f = 5

Self Assessment Test (Unit-3)

Correct | Unattempted

Incorrect | Q 13/50

Q : The maximum number of electrons in subshell can be calculated by using formula

A $2l + 1$

B $2n^2$

C **$2(2l+1)$**

D $n + l$

Correct
Unattempted
Incorrect
Q 14/50

Q : The incorrect statement about d-orbitals

A It is not present in first two principal energy levels

B They are associated with only transition elements

C They are five degenerate orbitals in d-subshell

D p-orbitals are filled before d-orbitals in the same principal energy level

Self Assessment Test (Unit-3)

Correct | Unattempted | Incorrect | Q 15/50

Q : Valence electron of K has _____ value for spin quantum number with _____ spin

A $+\frac{1}{2}$, clockwise

B $+\frac{1}{2}$, anticlockwise

C $-\frac{1}{2}$, clockwise

D $-\frac{1}{2}$, anticlockwise

Self Assessment Test (Unit-3)

Correct

Unattempted

Incorrect

Q 16/50

Q : Fourth shell can accommodate 32 electrons how many electron can be placed in 5^{th} shell

A 42

B 40

C 50

D 60

Correct Unattempted

Incorrect Q 17/50

Q : The correct set of quantum numbers is

A $n = 2, \quad \ell = 2, \quad m = 0, \quad s = +\frac{1}{2}$

B $n = 2, \quad \ell = 1, \quad m = 0, \quad s = +\frac{1}{2}$

C $n = 2, \quad \ell = 1, \quad m = -2, \quad s = +\frac{1}{2}$

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Q : The place between two orbitals where probability for finding the electron is zero known as

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D Orbital

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A. Increases with the increase in principal quantum number

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C $1s^2, 2s^2, 2p^6, 3s^2, 3p_x^0, 3p_y^1, 3p_z^2$

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Correct | Unattempted

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Q : The number of d-electrons in Fe^{+2} (Z = 26) is not equal to

A p electrons in Ne (Z = 10)

B d electrons in Fe (Z = 26)

C s electrons in Mg (Z = 12)

D p electrons in Ar (Z = 18)

Correct
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Q 22/50

Q : The rule for filling electrons in subshells of atoms is

A Aufbau's principle

B Hund's rule

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D All of these

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Q 23/50

Q : When 6d orbital is completed the entering electron goes into

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Self Assessment Test (Unit-3)

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Correct | Unattempted

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Q : Arrange following according to correct trend of 1st ionization energies: Na, Mg, Al, P, S

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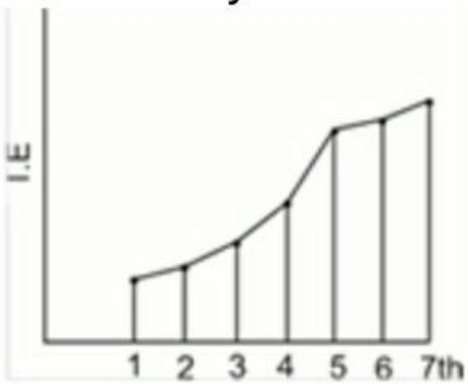

A 4

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Q : Second electron affinity value is always with positive sign. It is due to repulsion of second incoming electron with

A Cation

B Atom

C Anion

D Molecule

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Incorrect
Q 30/50

Q : Which one of the following has maximum electron affinity

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Correct | Unattempted

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Q : Octet rule is followed by central atom in

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C SF_6

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Self Assessment Test (Unit-3)

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Incorrect

Q 32/50

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Q 33/50

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29 30 31 32 33 34 35

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Incorrect

Q 36/50

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B 2 electrons

C 3 electrons

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Correct Unattempted

Incorrect Q 37/50

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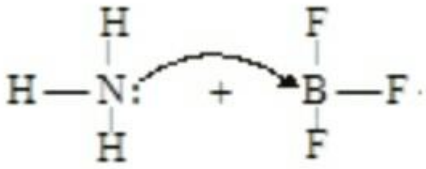

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Q 40/50

Q : The shape of H_3O^+ is

A Tetrahedral

B Angular

C Pyramidal

D Trigonal planar

Correct | Unattempted

Incorrect | Q 41/50

Q : Total number of valence electrons of nitrogen atom in ammonium ion is

A 6

B 10

C 8

D 16

Correct | Unattempted

Incorrect | Q 42/50

Q : Which one of the following is linear molecule

A SO_2

B H_2S

C C_2H_4

D HCN

Correct
Unattempted
Incorrect
Q 43/50

Q : The molecular geometry of H_2O is

A Tetrahedral

B Bent

C Linear

D Both A and B

Correct
Unattempted
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Q 44/50

Q : Lateral overlapping is expected in

A Sigma bond

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C Pi bond

D Ionic bond

Correct
Unattempted
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Q 45/50

Q : Total number of sigma electrons in one molecule of $HC \equiv CH$

A 3

B 4

C 6

D 8

Correct | Unattempted

Incorrect | Q 46/50

Q : An organic molecule formed by chemical combination of two carbon atoms and four hydrogen atoms have

A $6\sigma, 0\pi$

B $1\sigma, 5\pi$

C $5\sigma, 1\pi$

D $4\sigma, 2\pi$

Correct | Unattempted

Incorrect | Q 47/50

Q : In sp^3 hybridized orbital, the s character is:

A 25%

B 75%

C 50%

D 100%

Correct
Unattempted
Incorrect
Q 48/50

Q : Which of the following molecule is not planar

A Benzene

B Boron trichloride

C Ethene

D Phosphorous trichloride

Self Assessment Test (Unit-3)

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Q 49/50

Q : On the basis of s– character which of following overlap results in a practically strongest bond

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A sp^3

B sp

C sp^2

D dsp^2

TEST

Test Level-3 (Unit-3)

50 Questions

40 min

Topics

TL-3 Unit (3A. Atomic Structure & 4A. Chemical Bonding)

Start Test

39 : 58

Q 1/50 40 min Hint

Q : The letters s, p, d and f are used to represent

A Orbit

B Sub-shells

C Shells

D Orbital

1 2 3 4 5 6 7

39 : 56

Q 2/50 40 min Hint

Q : The value of magnetic quantum number is directly determined by the value of

A Principal quantum number

B Azimuthal quantum number

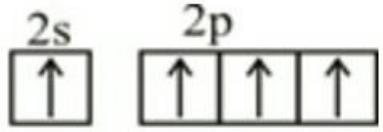
C Spin quantum number

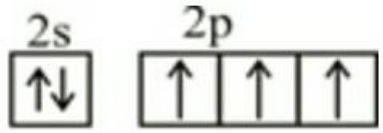
D Both “A” and “B”

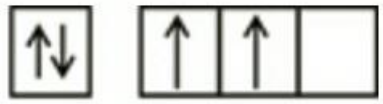
39 : 55

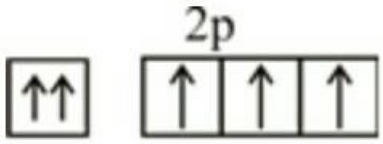
Q 3/50 40 min Hint

Q : In which of the following Pauli's exclusion principle is violated

A 

B 

C 

D 

39 : 54

Q 4/50 40 min Hint

Q : The number of completely filled orbitals in O^{-2} ion is

A 2

B 3

C 4

D 5

1 2 3 4 5 6 7

39 : 53

Q 5/50 40 min Hint

Q : How many electrons are present in the M shell of Cr-24

A 18

B 14

C 12

D 13

1 2 3 4 5 6 7

39 : 52

Q 6/50 40 min Hint

Q : Which of the following correctly represents the 2nd ionization energy of Mg

A $Mg_{(s)} \longrightarrow Mg^{+2}_{(g)} + 2\bar{e}$

B $Mg_{(g)} \longrightarrow Mg^{+2}_{(g)} + 2\bar{e}$

C $Mg^{-1}_{(g)} \longrightarrow Mg^{-2}_{(g)} + 1\bar{e}$

D $Mg_{(g)} \longrightarrow Mg^{-1}_{(g)} + 1\bar{e}$

39 : 51

Q 7/50 40 min Hint

Q : Cathode rays and canal rays when pass through electric field they will _____

A Deflect towards negatively charged plate only

B Deflect towards positively and negatively charged plates respectively

C Deflect towards positively charged plate only

D Not deflect towards negatively charged plate and positively charge plate

39 : 49

Q 8/50 40 min Hint

Q : A fundamental particle 1840 times heavier than electron, NOT deflected in the electric field is

A Present in the nucleus

B Present in the shells

C Present close to the nucleus

D Farthest from the nucleus

39 : 48

Q 9/50 40 min Hint

Q : Which of the following elements has least number of electrons in its 'N' shell

A $_{25}Mn$

B $_{28}Ni$

C $_{20}Ca$

D $_{24}Cr$

39 : 47

Q 10/50 40 min Hint

Q : Atoms of two different elements having same nucleon number but different proton number are called

A Isotopes

B Isobars

C Isotones

D Isoelectronic

39 : 45

Q 11/50 40 min Hint

Q : All of the following pairs of specie are isoelectronic except

A Ne, Na^{+1}

B F^-, Ar

C CO, N_2

D Cl^-, Ar

39 : 43

Q 12/50 40 min Hint

Q : 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^4

C ns^2, np^3

D ns^2, np^1

39 : 42

Q 13/50 40 min Hint

Q : A di-valent cation having 10 electrons and 24 nucleon number. The number of neutrons are

A 11

B 10

C 12

D 24

39 : 40

Q 14/50 40 min Hint

Q : An unknown element having electronic configuration [Ne] $3s^2$, $3p^3$ can form

A Uni-negative ion

B Di-Positive ion

C Tri-Negative ion

D Uni-Positive ion

39 : 39

Q 15/50 40 min Hint

Q : The molecule which has strongest bond is

A F–F

B Br–Br

C Cl–Cl

D I–I

10 11 12 13 14 15 16

39 : 38

Q 16/50 40 min Hint

Q : In which of the following compound, all carbon atoms show sp^2 hybridization

A Carbon dioxide

B 1, 3–Butadiene

C Propene

D Ethane nitrile

39 : 36

Q 17/50 40 min Hint

Q : Incorrect statement about ice is

A Structure of ice is octahedral

B Ice is less dense than water

C Ice is insulator

D Structure of ice is cubic

39 : 35

Q 18/50 40 min Hint

Q : Which of the following is most ionic in nature

A Sodium chloride

B Sodium bromide

C Sodium fluoride

D Sodium iodide

13 14 15 16 17 18 19

39 : 34

Q 19/50 40 min Hint

Q :
The compound which has maximum electronic repulsions is

A H_2O

B NH_4^+

C NH_3

D CH_4

39 : 33

Q 20/50 40 min Hint

Q : Octet rule is followed by the central atom of _____ molecule

A BF_3

B SF_6

C SO_2

D CCl_4

39 : 32

Q 21/50 40 min Hint

Q : Benzene contains delocalized π-electronic cloud due to

A sp^2-sp^2 overlapping

B sp^2-s overlapping

C s-p overlapping

D $p_z - p_z$ overlapping

39 : 30

Q 22/50 40 min Hint

Q : Noble gases partially dissolve in water due to

A H-Bonding

B London dispersion forces

C Dipole-dipole interaction

D Dipole-induced dipole forces

39 : 29

Q 23/50 40 min Hint

Q :

Some properties are given below. Which corresponds to PCl_3

(i) sp^2 hybridization (ii) Polar (iii) Trigonal pyramidal (iv) AB_3 type molecule

A i, ii, and iii

B ii and iii

C ii, iii and iv

D i, ii, iii and iv

39 : 27

Q 24/50 40 min Hint

Q : When bond order increases, then bond length becomes _____ and bond becomes ___

A Shorter, stronger

B Shorter, weaker

C Longer, weaker

D Longer, stronger

19 20 21 22 23 24 2

39 : 26

Q 25/50 40 min Hint

Q : The pair of compounds having same geometry and hybridization

A SO_3, NH_3

B $CdCl_2$, PCl_3

C H_2S, H_2O

D SO_2, $BeCl_2$

39 : 25

Q 26/50 40 min Hint

Q : Possible bonds formed by overlapping of p-p orbitals is/are

A σ-bond

B π-bond

C Both σ and π

D None of these

39 : 24

Q 27/50 40 min Hint

Q : % age of covalent bond in H_3O^+ is

A 33%

B 75%

C 25%

D 66%

22 23 24 25 26 27 28

39 : 23

Q 28/50 40 min Hint

Q :

Among given properties, which is correctly matched with metallic solids?

i. They show metallic luster ii. Their conductance decreases with rise of temperature iii. Malleable and ductile iv. Cubic and hexagonal closest packing

A i, ii and iii

B i, ii, iii and iv

C i, ii and iv

D i, iii and iv

22 23 24 25 26 27 28

39 : 20

Q 29/50 40 min Hint

Q : Strength of bond depends upon the following factors except

A E.N difference between bonded atoms

B Bond length

C Sizes of the atoms

D Shielding effect

25 26 27 28 29 30 31

39 : 19

Q 30/50 40 min Hint

Q : The distance between the nuclei of two atoms forming covalent bond is called

A Covalent radius

B Atomic radius

C Bond angle

D Bond length

25 26 27 28 29 30 31

39 : 18

Q 31/50 40 min Hint

Q : Which one of the following has minimum electron affinity value

A O

B S

C Se

D Te

25 26 27 28 29 30 31

39 : 17

Q 32/50 40 min Hint

Q : **When *l* = 3 , the number of possible orbitals in the sub–shell is**

A 1

B 5

C 3

D **7**

39 : 16

Q 33/50 40 min Hint

Q : An element having maximum number of unpaired electrons in p-sub-shell will have the atomic number _____

A 10

B 15

C 12

D 16

39 : 14

Q 34/50 40 min Hint

Q : The _____ quantum number explains the shapes of orbitals

A Principal

B Azimuthal

C Magnetic

D Spin

30 31 32 33 34 35 36

39 : 13

Q 35/50 40 min Hint

Q : Which of following violates Hund's rule

A $1s^2, 2s^2, 2p_x^1, 2p_y^1, 2pz^0$

B $1s^2, 2s^2, 2p_x^2, 2p_y^2, 2pz^2$

C $1s^2, 2s^2, 2p_x^2, 2p_y^o\ 2p_z^o$

D $1s^2, 2s^1$

39 : 12

Q 36/50 40 min Hint

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

A 4

B 3

C 2

D 1

30 31 32 33 34 35 36

39 : 10

Q 37/50 40 min Hint

Q : If $l = 1$ then orbitals in which the value of $m = +1, 0, -1$ are

A $p_x, p_y, d_{xy},$

B p_x, p_y, p_z

C d_{xy}, d_{yz}, d_{xz}

D d_{x2-y2}, d_{z2}

39 : 09

Q 38/50 40 min Hint

Q : When we distribute the electron in Ca-atom, the shape of valence orbital in which last electron is present is

A Spherical

B Dumb-bell

C Complicated

D Has no specific shape

39 : 08

Q 39/50 40 min Hint

Q : The charge on proton is

A -1.6×10^{-31} C

B -1.6×10^{-19}C

C 1.6×10^{-31}C

D $+1.6 \times 10^{-19}$C

39 : 03

Q 40/50 40 min Hint

Q : The mass of electron is 1836 times .....

A Less than proton

B More than proton

C Less than neutron

D More than neutron

39 : 02

Q 41/50 40 min Hint

Q : The value of Quantum number for the valence electron in Fluorine atom is

A n = 2 ; l = 1 ; m = ±1

B n = 3 ; l = 1 ; m = ± 1

C n = 3 ; l = 0 ; m = ± 2

D n = 3 ; l = 2 ; m = ±3

39 : 00

Q 42/50 40 min Hint

Q : Unknown element having 212 nucleon number and 90 atomic number, the number of electrons, protons and neutrons in that element is

A e = 90 p = 90 n = 110

B e = 90 p = 122 n = 90

C e = 90 p = 90 n = 122

D e = 90 p = 100 n = 120

38 : 56

Q 43/50 40 min Hint

Q : When cathode rays past through the magnetic field (M.F) they

A Deflect towards ‘South pole’

B Deflect towards ‘North pole’

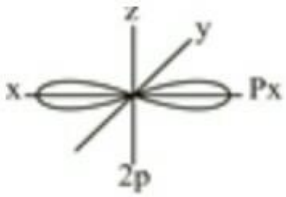
C Deflect perpendicular to the axis of M.F

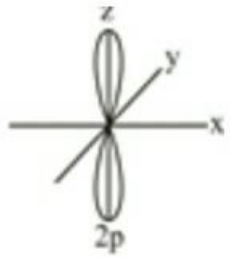
D Deflect towards any pole

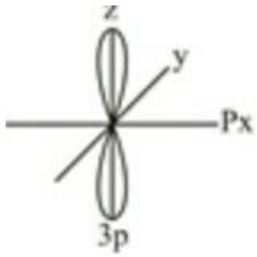
38 : 54

Q : Which orbital correctly represents the last electron in the element of VII-A group and 3^{rd} period

A 

B 

C 

D 

38 : 53

Q 45/50 40 min Hint

Q : The isotone of C-14 is

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

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

C $^{16}_{8}O$

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

38 : 51

Q 46/50 40 min Hint

Q : The maximum number of electrons in an orbit can be calculated by the formula

A $2(2l + 1)$

B $(2l + 1)$

C $2n^2$

D n^2

38 : 50

Q 47/50 40 min Hint

Q : Which among the following has net dipole moment

A CH_4

B NH_3

C BF_3

D CCl_4

38 : 49

Q 48/50 40 min Hint

Q : Which overlapping may not lead to sigma bond formation

A p-p in fluorine

B sp^2-sp^2 in benzene

C s-p in hydrogen fluoride

D p-p in ethene

38 : 47

Q 49/50 40 min Hint

Q : Which of the following molecule contains maximum number of lone pairs

A Chlorine

B Carbon dioxide

C Oxygen

D Hydrogen chloride

38 : 46

Q 50/50 40 min Hint

Q : Correct statement when coordinate covalent bond is formed between NH_3 and BF_3

A Ammonia is Lewis acid

B Fluorine accepts lone pair due to its high electronegativity

C Nitrogen of ammonia donates its lone pair to 2p orbital of Boron

D Coordinate covalent bond is also called non-polar bond

Test Level-3 (Unit-3)

Correct

Unattempted

Incorrect

Q 1/50

Q : The letters s, p, d and f are used to represent

A Orbit

B Sub-shells

C Shells

D Orbital

1 2 3 4 5 6 7

Test Level-3 (Unit-3)

Correct

Unattempted

Incorrect

Q 2/50

Q : The value of magnetic quantum number is directly determined by the value of

A Principal quantum number

B Azimuthal quantum number

C Spin quantum number

D Both “A” and “B”

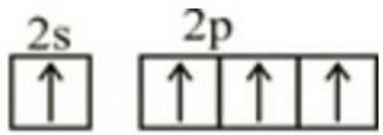
Correct

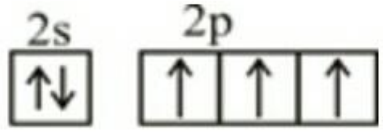
Unattempted

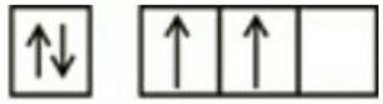
Incorrect

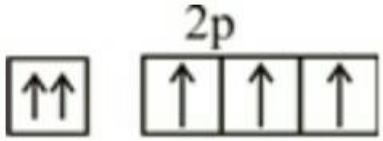
Q 3/50

Q : In which of the following Pauli's exclusion principle is violated

A 

B 

C 

D 

Correct

Unattempted

Incorrect

Q 4/50

Q : The number of completely filled orbitals in O^{-2} ion is

A 2

B 3

C 4

D 5

Correct

Unattempted

Incorrect

Q 5/50

Q : How many electrons are present in the M shell of Cr-24

A 18

B 14

C 12

D 13

Correct | Unattempted | Incorrect | Q 6/50

Q : Which of the following correctly represents the 2nd ionization energy of Mg

A $Mg_{(s)} \longrightarrow Mg^{+2}_{(g)} + 2\bar{e}$

B $Mg_{(g)} \longrightarrow Mg^{+2}_{(g)} + 2\bar{e}$

C $Mg^{-1}_{(g)} \longrightarrow Mg^{-2}_{(g)} + 1\bar{e}$

D $Mg_{(g)} \longrightarrow Mg^{-1}_{(g)} + 1\bar{e}$

Test Level-3 (Unit-3)

Correct

Unattempted

Incorrect

Q 7/50

Q : Cathode rays and canal rays when pass through electric field they will _____

A Deflect towards negatively charged plate only

B Deflect towards positively and negatively charged plates respectively

C Deflect towards positively charged plate only

D Not deflect towards negatively charged plate and positively charge plate

1 2 3 4 5 6 7

Correct

Unattempted

Incorrect

Q 8/50

Q : A fundamental particle 1840 times heavier than electron, NOT deflected in the electric field is

A Present in the nucleus

B Present in the shells

C Present close to the nucleus

D Farthest from the nucleus

Correct

Unattempted

Incorrect

Q 9/50

Q : Which of the following elements has least number of electrons in its 'N' shell

A $_{25}Mn$

B $_{28}Ni$

C $_{20}Ca$

D $_{24}Cr$

Test Level-3 (Unit-3)

Correct

Unattempted

Incorrect

Q 10/50

Q : Atoms of two different elements having same nucleon number but different proton number are called

A Isotopes

B Isobars

C Isotones

D Isoelectronic

Correct

Unattempted

Incorrect

Q 11/50

Q : All of the following pairs of specie are isoelectronic except

A Ne, Na^{+1}

B F^-, Ar

C CO, N_2

D Cl^-, Ar

Test Level-3 (Unit-3)

Correct

Unattempted

Incorrect

Q 12/50

Q : 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^4

C ns^2, np^3

D ns^2, np^1

Test Level-3 (Unit-3)

Correct

Unattempted

Incorrect

Q 13/50

Q : A di-valent cation having 10 electrons and 24 nucleon number. The number of neutrons are

A 11

B 10

C 12

D 24

9 10 11 12 13 14 1

Correct

Unattempted

Incorrect

Q 14/50

Q : An unknown element having electronic configuration [Ne] $3s^2$, $3p^3$ can form

A Uni-negative ion

B Di-Positive ion

C Tri-Negative ion

D Uni-Positive ion

Correct

Unattempted

Incorrect

Q 15/50

Q : The molecule which has strongest bond is

A F–F

B Br–Br

C Cl–Cl

D I–I

Correct

Unattempted

Incorrect

Q 16/50

Q : In which of the following compound, all carbon atoms show sp^2 hybridization

A Carbon dioxide

B 1, 3–Butadiene

C Propene

D Ethane nitrile

Correct

Unattempted

Incorrect

Q 17/50

Q : Incorrect statement about ice is

A Structure of ice is octahedral

B Ice is less dense than water

C Ice is insulator

D Structure of ice is cubic

Test Level-3 (Unit-3)

Correct

Unattempted

Incorrect

Q 18/50

Q : Which of the following is most ionic in nature

A Sodium chloride

B Sodium bromide

C Sodium fluoride

D Sodium iodide

Test Level-3 (Unit-3)

Correct

Unattempted

Incorrect

Q 19/50

Q :
The compound which has maximum electronic repulsions is

A H_2O

B NH_4^+

C NH_3

D CH_4

Test Level-3 (Unit-3)

Correct

Unattempted

Incorrect

Q 20/50

Q : Octet rule is followed by the central atom of _____ molecule

A BF_3

B SF_6

C SO_2

D CCl_4

Correct Unattempted

Incorrect Q 21/50

Q : Benzene contains delocalized π-electronic cloud due to

A sp^2-sp^2 overlapping

B sp^2-s overlapping

C s-p overlapping

D $p_z - p_z$ overlapping

Correct

Unattempted

Incorrect

Q 22/50

Q : Noble gases partially dissolve in water due to

A H-Bonding

B London dispersion forces

C Dipole-dipole interaction

D Dipole-induced dipole forces

Correct

Unattempted

Incorrect

Q 23/50

Q :

Some properties are given below. Which corresponds to PCl_3

(i) sp^2 hybridization (ii) Polar (iii) Trigonal pyramidal (iv) AB_3 type molecule

A i, ii, and iii

B ii and iii

C ii, iii and iv

Correct

Unattempted

Incorrect

Q 24/50

Q : When bond order increases, then bond length becomes _____ and bond becomes ___

A Shorter, stronger

B Shorter, weaker

C Longer, weaker

D Longer, stronger

Correct

Unattempted

Incorrect

Q 25/50

Q : The pair of compounds having same geometry and hybridization

A SO_3, NH_3

B $CdCl_2$, PCl_3

C H_2S, H_2O

D SO_2, $BeCl_2$

Correct

Unattempted

Incorrect

Q 26/50

Q : Possible bonds formed by overlapping of p-p orbitals is/are

A σ-bond

B π-bond

C Both σ and π

D None of these

Correct

Unattempted

Incorrect

Q 27/50

Q : % age of covalent bond in H_3O^+ is

A 33%

B 75%

C 25%

D 66%

Correct

Unattempted

Incorrect

Q 28/50

Q :

Among given properties, which is correctly matched with metallic solids?

i. They show metallic luster ii. Their conductance decreases with rise of temperature iii. Malleable and ductile iv. Cubic and hexagonal closest packing

A i, ii and iii

B i, ii, iii and iv

C i, ii and iv

Correct

Unattempted

Incorrect

Q 29/50

Q : Strength of bond depends upon the following factors except

A E.N difference between bonded atoms

B Bond length

C Sizes of the atoms

D Shielding effect

Correct

Unattempted

Incorrect

Q 30/50

Q : The distance between the nuclei of two atoms forming covalent bond is called

A Covalent radius

B Atomic radius

C Bond angle

D Bond length

Correct

Unattempted

Incorrect

Q 31/50

Q : Which one of the following has minimum electron affinity value

A O

B S

C Se

D Te

Correct

Unattempted

Incorrect

Q 32/50

Q : **When $l = 3$, the number of possible orbitals in the sub–shell is**

A 1

B 5

C 3

D **7**

Correct

Unattempted

Incorrect

Q 33/50

Q : An element having maximum number of unpaired electrons in p-sub-shell will have the atomic number _____

A 10

B 15

C 12

D 16

Test Level-3 (Unit-3)

Correct

Unattempted

Incorrect

Q 34/50

Q : The _____ quantum number explains the shapes of orbitals

A Principal

B Azimuthal

C Magnetic

D Spin

30 31 32 33 34 35 3

Correct

Unattempted

Incorrect

Q 35/50

Q : Which of following violates Hund's rule

A $1s^2, 2s^2, 2p_x^1, 2p_y^1, 2pz^0$

B $1s^2, 2s^2, 2p_x^2, 2p_y^2, 2pz^2$

C $1s^2, 2s^2, 2p_x^2, 2p_y^o\ 2p_z^o$

D $1s^2, 2s^1$

Correct

Unattempted

Incorrect

Q 36/50

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

A 4

B 3

C 2

D 1

Correct

Unattempted

Incorrect

Q 37/50

Q : If $l = 1$ then orbitals in which the value of m = +1, 0, −1 are

A $p_x, p_y, d_{xy},$

B p_x, p_y, p_z

C d_{xy}, d_{yz}, d_{xz}

D d_{x2-y2}, d_{z2}

Correct

Unattempted

Incorrect

Q 38/50

Q : When we distribute the electron in Ca-atom, the shape of valence orbital in which last electron is present is

A Spherical

B Dumb-bell

C Complicated

D Has no specific shape

Correct

Unattempted

Incorrect

Q 39/50

Q : The charge on proton is

A -1.6×10^{-31} C

B -1.6×10^{-19}C

C 1.6×10^{-31}C

D $+1.6 \times 10^{-19}$C

Test Level-3 (Unit-3)

Correct

Unattempted

Incorrect

Q 40/50

Q : The mass of electron is 1836 times .....

A Less than proton

B More than proton

C Less than neutron

D More than neutron

Correct

Unattempted

Incorrect

Q 41/50

Q : The value of Quantum number for the valence electron in Fluorine atom is

A n = 2 ; l = 1 ; m = ±1

B n = 3 ; l = 1 ; m = ± 1

C n = 3 ; l = 0 ; m = ± 2

D n = 3 ; l = 2 ; m = ±3

Correct

Unattempted

Incorrect

Q 42/50

Q : Unknown element having 212 nucleon number and 90 atomic number, the number of electrons, protons and neutrons in that element is

A e = 90 p = 90 n = 110

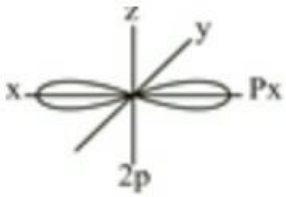
B e = 90 p = 122 n = 90

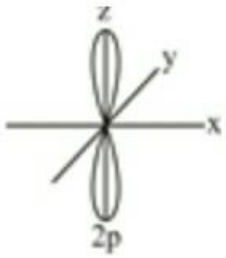
C e = 90 p = 90 n = 122

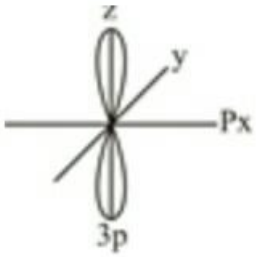
D e = 90 p = 100 n = 120

Q : Which orbital correctly represents the last electron in the element of VII-A group and 3^{rd} period

A 

B 

C 

D 

Correct

Unattempted

Incorrect

Q 45/50

Q : The isotone of C-14 is

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

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

C $^{16}_{8}O$

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

Correct

Unattempted

Incorrect

Q 46/50

Q : The maximum number of electrons in an orbit can be calculated by the formula

A $2(2l + 1)$

B $(2l + 1)$

C $2n^2$

D n^2

Correct

Unattempted

Incorrect

Q 47/50

Q : Which among the following has net dipole moment

A CH_4

B NH_3

C BF_3

D CCl_4

Correct

Unattempted

Incorrect

Q 48/50

Q : Which overlapping may not lead to sigma bond formation

A p-p in fluorine

B sp^2-sp^2 in benzene

C s-p in hydrogen fluoride

D p-p in ethene

Correct

Unattempted

Incorrect

Q 49/50

Q : Which of the following molecule contains maximum number of lone pairs

A Chlorine

B Carbon dioxide

C Oxygen

D Hydrogen chloride

Test Level-3 (Unit-3)

Correct | Unattempted

Incorrect | Q 50/50

Q : Correct statement when coordinate covalent bond is formed between NH_3 and BF_3

A Ammonia is Lewis acid

B Fluorine accepts lone pair due to its high electronegativity

C Nitrogen of ammonia donates its lone pair to 2p orbital of Boron

D Coordinate covalent bond is also called non-polar bond