NEET 2025 Paper-(PCB)

Instructions:

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46. The ratio of the wavelengths of the light absorbed by a Hydrogen atom when it undergoes $n = 2 \rightarrow n = 3$ and $n = 4 \rightarrow n = 6$ transitions, respectively, is

(A) $\frac{1}{36}$ (B) $\frac{1}{16}$

(C) $\frac{1}{9}$ (D) $\frac{1}{4}$

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Correct Option: D

Solution:

$$\Delta E = \frac{hc}{\lambda} = E_{final} - E_{initial} \left(E_n = \frac{-R_H}{n^2}\right)$$

$$\Delta E_{2\rightarrow 3} = \frac{hc}{\lambda_{2\rightarrow 3}} = E_3 - E_2 = \frac{-R_H}{3^2} - \left(\frac{-R_H}{2^2}\right)$$

$$= R_H\left(\frac{1}{4} - \frac{1}{9}\right)$$

$$= R_H \times \frac{5}{36}$$

$$\therefore \lambda_{2\rightarrow 3} = \frac{\mathrm{hc}\cdot 36}{\mathrm{R_H}\cdot 5}$$

$$\Delta E_{4\rightarrow 6} = E_6 - E_4 = \frac{-R_H}{36} + \frac{R_H}{16} = \frac{R_H \times 20}{36 \times 16}$$

$$\frac{\mathrm{hc}}{\lambda_{4\rightarrow 6}} = \frac{\mathrm{R_H} \times 20}{36 \times 16}$$

$$\lambda_{4\rightarrow 6} = \frac{\mathrm{hc} \times 36 \times 16}{\mathrm{R_H}\cdot 20}$$

$$\frac{\lambda_{2\rightarrow 3}}{\lambda_{4\rightarrow 6}} = \frac{\frac{\mathrm{hc}\cdot 36}{\mathrm{R_H}\cdot 5}}{\frac{\mathrm{hc}\times 36\times 16}{\mathrm{R_H}\cdot 20}}$$

$$= \frac{1}{4}$$

47. Which of the following statements are true?

A. Unlike Ga that has a very high melting point, Cs has a very low melting point.

B. On Pauling scale, the electronegativity values of N and Cl are not the same.

C. Ar, K^+, Cl^-, Ca^{2+}, and S^{2-} are all isoelectronic species.

D. The correct order of the first ionization enthalpies of Na, Mg, Al, and Si is Si > Al > Mg > Na.

E. The atomic radius of Cs is greater than that of Li and Rb.

Choose the correct answer from the options given below

(A) A, B and E only (B) C and E only

(C) C and D only (D) A, C and E only

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Correct Option: B

Solution:

(C) $Ca^{2+}, K^+, Ar, Cl^-, S^{2-}$ all species have 18 electron that's why these are isoelectronic species.

(E) Radius order Cs > Rb > K > Na > Li(4)Li < Be N < B < C

48. Match List I with List II

List I (Ion):		List II (Group Number in Cation Analysis):	
A.	Co^{2+}	I.	Group-I
B.	Mg^{2+}	II.	Group-III
C.	Pb^{2+}	III.	Group-IV
D.	Al^{3+}	IV.	Group-VI

Choose the correct answer from the option given belo

(A) A-III, B-IV, C-II, D-I (B) A-III, B-IV, C-I, D-

(C) A-III, B-II, C-IV, D-I (D) A-III, B-II, C-I, D-

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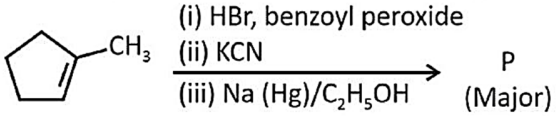
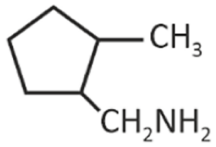
Correct Option: B

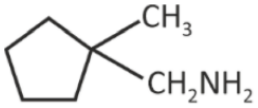
Solution:

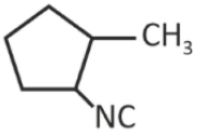
List I (Ion):		List II (Group Number in Cation Analysis):	
A.	Co^{2+}	I.	Group-IV
B.	Mg^{2+}	II.	Group-VI
C.	Pb^{2+}	III.	Group-I
D.	Al^{3+}	IV.	Group-III

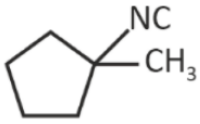
49. Predict the major product 'P' in the following sequ of reactions-



(A) 

(B) 

(C) 

(D) 

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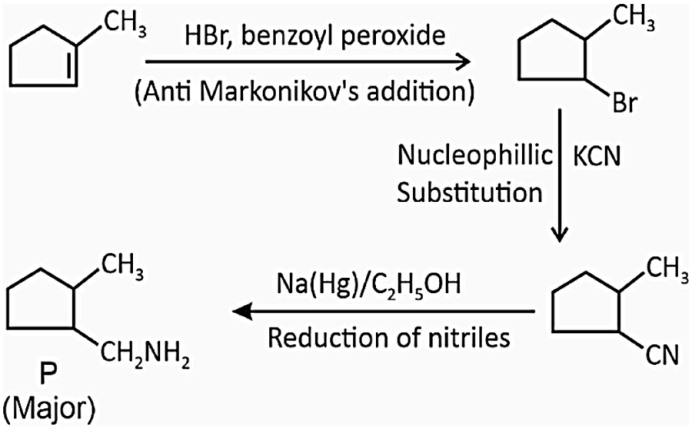
Correct Option: A

Solution:



50. Energy and radius of first Bohr orbit of He^+ and Li^{2+} are [Given $R_H = 2.18 \times 10^{-18}$ J, $a_0 = 52.9$pm]

(A) $E_n\,(Li^{2+}) = -19.62 \times 10^{-18}$ J;
$r_n\,(Li^{2+}) = 17.6$pm
$E_n\,(He^+) = -8.72 \times 10^{-18}$ J;
$r_n\,(He^+) = 26.4$pm

(B) $E_n\,(Li^{2+}) = -8.72 \times 10^{-18}$ J;
$r_n\,(Li^{2+}) = 26.4$pm
$E_n\,(He^+) = -19.62 \times 10^{-18}$ J;
$r_n\,(He^+) = 17.6$pm

(C) $E_n\,(Li^{2+}) = -19.62 \times 10^{-16}$ J;
$r_n\,(Li^{2+}) = 17.6$pm
$E_n\,(He^+) = -8.72 \times 10^{-16}$ J;
$r_n\,(He^+) = 26.4$pm

(D) $E_n\,(Li^{2+}) = -8.72 \times 10^{-16}$ J;
$r_n\,(Li^{2+}) = 17.6$pm
$E_n\,(He^+) = -19.62 \times 10^{-16}$ J;
$r_n\,(He^+) = 17.6$pm

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Correct Option: A

Solution:

$E_n = \frac{-2.18\times10^{-18}\times z^2}{n^2} J;\ r_n = \frac{52.9\times n^2}{z} pm$

For He^+

$E_{He^+} = -2.18 \times 10^{-18} \times 4 = -8.72 \times 10^{-18}$ J

$r_{He^+} = \frac{52.9 \times 1}{2} = 26.45$pm

For Li^{2+}

$E_{Li^{2+}} = -2.18 \times 10^{-18} \times 9 = 19.62 \times 10^{-18}$ J

$r_{Li^{2+}} = \frac{52.9 \times 1}{3} = 17.63$pm

51. Which of the following are paramagnetic?
A. $[NiCl_4]^{2-}$
B. $Ni(CO)_4$
C. $[NI(CN)4]^{2-}$
D. $[Ni\,(H_2O)_6]^{2+}$
E. Nil(PPha)s
Choose the correct answer from the options given bel

(A) A and C only (B) B and E only

(C) A and D only (D) A, D and E only

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Correct Option: C

Solution:

A. $[NiCl_4]^{2-}$; Ni^{+2}; $3d^8$; sp^3 hybridisation; 2 unpaire electrons; paramagnetic

B. $Ni(CO)_4$; Ni; $3d^8 4s^2$; sp^3 hybridisation; Zero unpaire electron; diamagnetic

C. $[Ni(CN)_4]^{2-}$; Ni^{+2}; $3d^8$; dsp^2 hybridisation; Zero unpaired electron; diamagnetic

D. $[Ni\,(H_2O)_6]^{2+}$; Ni^{2+}, $3d^8$; sp^3d^2 hybridisation; Tw unpaired electron; paramagnetic

E. $Ni\,(PPh_3)_4$; Ni; $3d^8 4s^2$, sp^3 hybridisation; zero unpaired electron; Diamagnetic

52. Given below are two statements:
Statement I : Like nitrogen that can form ammoni senic can form arsine.

Statement II : Antimony cannot form antimony pentoxide.
In the light of the above statements, choose the most appropriate answer from the options given below:

(A) Both Statement I and Statement II are correct

(B) Both Statement I and Statement II are incorrect

(C) Statement I is correct but Statement II is incorrect

(D) Statement I is incorrect but Statement II is correct

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Correct Option: C

Solution:

$N = NH_3$ $As \rightarrow AsH_3$ are possible correct statement.

All elements of N-family form two types of E_2O_3 and E_2O_5 oxides.

Statement is wrong.

Statement-I is correct & Statement-II is incorrect.

53. Which among the following electronic configurations belong to main group elements (s & p-Block) ?
A. $[Ne]3\ s^1$
B. $[Ar]3\ d^3 4\ s^2$
C. $[Kr]4\ d^{10} 5\ s^2 5p^5$
D. $[Ar]3\ d^{10} 4\ s^1$
E. $[Rn]5f^0 6\ d^2 7\ s^2$

(A) B and E only (B) A and C only

(C) D and E only (D) A, C and D only

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Correct Option: B

Solution:

Main group elements are s & p-block elements.

A $\rightarrow$ s-block

C $\rightarrow$ p-block

54. Dalton's Atomic theory could not explain which of the following?

(A) Law of conservation of mass (B) Law of constant proportion

(C) Law of multiple proportion (D) Law of gaseous volume

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Correct Option: D

Solution:

Dalton's atomic theory could not explain law of gaseous volume.

55. Consider the following compounds:
KO_2, H_2O_2 and H_2SO_4.
The oxidation states of the underlined elements in are, respectively,

(A) $+1, -1$, and $+6$ (B) $+2, -2$, and $+6$

(C) $+1, -2$, and $+4$ (D) $+4, -4$, and $+6$

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Correct Option: A

Solution:

$\underset{\downarrow}{KO_2}$, $\underset{\downarrow}{H_2O_2}$

Alkali metals $2(+1) + 2x = 0$

always show $+1$ $x = -1$

O.S. in its

compounds

$\underset{\downarrow}{H_2SO_4}$

$2(+1) + x + 4(-2) = 0$
$x = +6$

56. If the half-life $(t_{1/2})$ for a first order reaction is 1 mir then the time required for 99.9 % completion of the tion is closest to:

(A) 2 minutes (B) 4 minutes

(C) 5 minutes (D) 10 minutes

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Correct Option: D

Solution:

For 1^{st} order reactions : $t_{99.9\%} = 10 \times t_{1/2}$

$t_{99.9\%} = 10 \times 1$
$= 10$ minute

57. The correct order of the wavelength of light absorbe the following complexes is,

A. $[Co(NH_3)_6]^{3+}$
B. $[Co(CN)_6]^{3-}$
C. $[Cu(H_2O)_4]^{2+}$
D. $[Ti(H_2O)_6]^{3+}$
Choose the correct answer from the options given below:

(A) B < D < A < C

(B) B < A < D < C

(C) C < D < A < B

(D) C < A < D < B

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Correct Option: B

Solution:

$\lambda \propto \frac{1}{\text{strength of ligand}}$

$\lambda \propto \frac{1}{\text{splitting}}$

A. $[Co(NH_3)_6]^{3+}$; 475 nm

B. $[Co(CN)_6]^{3-}$; 310 nm

C. $[Cu(H_2O)_4]^{2+}$; 600 nm

D. $[Ti(H_2O)_6]^{3+}$; 498 nm

Order of λ = C > D > A > B

58. Which one of the following compounds can exist as cis-trans isomers?

(A) Pent-1-ene
(B) 2-Methylhex-2-ene
(C) 1, 1-Dimethylcyclopropane
(D) 1, 2-Dimethylcyclohexane

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Correct Option: D

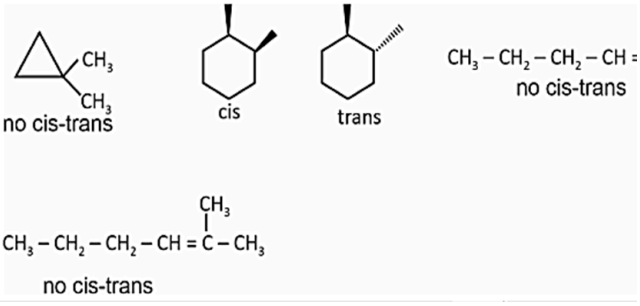
Solution:

Cis-trans isomers shown by :

Condition: Restricted rotation around double bond

Or

Different group around double bond



59. Phosphoric acid ionizes in three steps with their io tion constant values K_{a_1}, K_{a_2} and K_{a_3}, respectively, v K is the overall ionization constant. Which of the fo ing statements are true?
A. $\log K = \log K_{a_1} + \log K_{a_2} + \log K_{a_3}$
B. H_3PO_4 is a stronger acid than $H_2PO_4^-$ and HPO_4^{2}
C. $K_{a_1} > K_{a_2} > K_{a_3}$
D. $K_{a_1} = \frac{K_{a_3}+K_{a_2}}{2}$
Choose the correct answer from the options given be

(A) A and B only
(B) A and C only
(C) B, C and D only
(D) A, B and C only

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Correct Option: D

Solution:

H_3PO_4 is a stronger acid than $H_2PO_4^-$ and HPO_4^{2-}.

$H_3PO_4(aq) \rightleftharpoons H^+(aq) + H_2PO_4^-(aq)$ $K_{a_1} = 7.5 \times 10$

$H_2PO_4^-(aq) \rightleftharpoons H^+(aq) + HPO_4^{2-}(aq)$ $K_{a_2} = 6.2 \times 10$

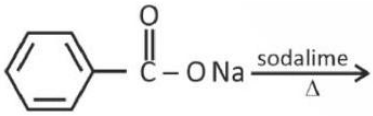
$HPO_4^{2-}(aq) \rightleftharpoons H^+(aq) + PO_4^{3-}(aq)$ $K_{a_3} = 1.7 \times 10^{-}$

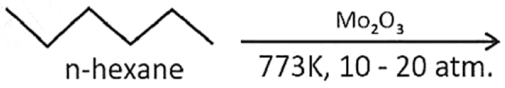
$K_{a_1} > K_{a_2} > K_{a_3}$

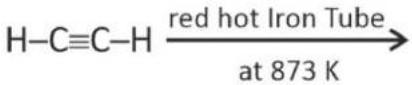
$\log K = \log K_{a_1} + \log K_{a_2} + \log K_{a_3}$

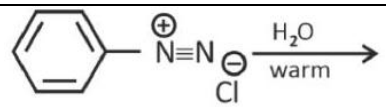
Ans. (A), (B) and (C) only

60. Which one of the following reactions does NOT benzene as the product?

(A) 

(B) 

(C) 

(D) 

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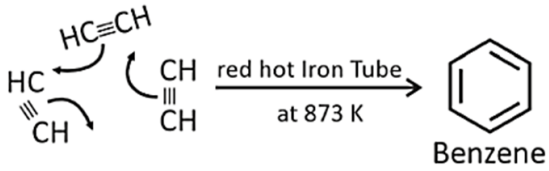
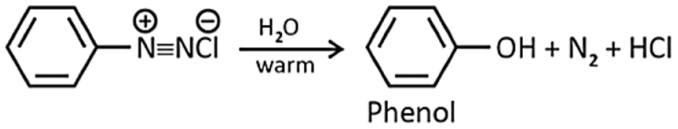
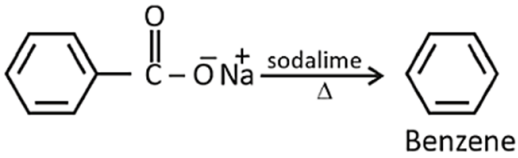
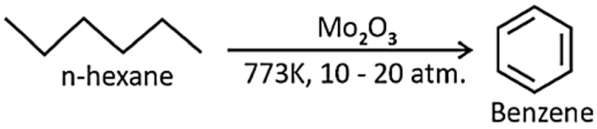
Correct Option: D

Solution:

(1) 

(2) 

(3) 

(4) 

61. If the molar conductivity (Λ_m) of a $0.050 mol L^{-1}$ solution of a monobasic weak acid is $90 Scm^2\ mol^{-1}$, its extent (degree) of dissociation will be [Assume $\Lambda^\circ_+ = 349.6 Scm^2\ mol^{-1}$ and $\Lambda^\circ_- = 50.4 Scm^2\ mol^{-1}$.]

(A) 0.115 (B) 0.125 (C) 0.225 (D) 0.215

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Correct Option: C

Solution:

$$\text{Degree of dissociation } (\alpha) = \frac{\Lambda_m}{\Lambda^\circ_m}$$

$$\Lambda^\circ_m = \Lambda^\circ_+ + \Lambda^\circ_-$$

$$= 349.6 + 50.4 = 400\ Scm^2\ mol^{-1}$$

$$\therefore \alpha = \frac{\Lambda_m}{\Lambda^\circ_m} = \frac{90}{400} = 0.225$$

62. Given below are two statements :

Statement I : A hypothetical diatomic molecule with bond order zero is quite stable.

Statement II : As bond order increases, the bond le increase.

In the light of the above statements, choose the mos propriate answer from the options given below:

(A) Both Statement I and Statement II are true

(B) Both Statement I and Statement II are false

(C) Statement I is true but Statement II are false

(D) Statement I is false but Statement II are true

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Correct Option: B

Solution:

$\left.\begin{matrix} He_2 \\ Be_2 \\ Ne_2 \end{matrix}\right\}$ Bond order $= 0$(does not exist)
Statement I is false

$$\text{Bond order} \propto \frac{1}{\text{Bond length}}$$

Statement II is false

63. Out of the following complex compounds, which of t compound will be having the minimum conductance solution?

(A) $[Co(NH_3)_3 Cl_3]$

(B) $[Co(NH_3)_4 Cl_2]$

(C) $[Co(NH_3)_6] Cl_3$

(D) $[Co(NH_3)_5 Cl] Cl$

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Correct Option: A, B

Solution:

Conductance of any complex depends on the following factor.

(1) Number of ions produced by complex.

(2) If number of ions are same then we will check charg on complex unit.

$\left.\begin{matrix} (1)\ [Co^{+3}(NH_3)_3 Cl_3] \\ (2)\ [Co^{+2}(NH_3)_4 Cl_2] \end{matrix}\right\}$ Both complex units have no charge. Therefore both complex units have same conductance.

(3) $[Co(NH_3)_6] Cl_3 \rightarrow [Co(NH_3)_6]^{+3} + 3Cl^-$

(4) $[Co(NH_3)_5 Cl]Cl \rightarrow [Co(NH_3)_5 Cl]^+ + Cl^-$

64. Match List-I with List-II

List-I		List-II	
(A)	XeO_3	(I)	$sp^3 d$; linear
(B)	XeF_2	(II)	sp^3; pyramidal
(C)	$XeOF_4$	(III)	$sp^3 d^3$; distorted octahedral
(D)	XeF_6	(IV)	$sp^3 d^2$; square pyramidal

Choose the correct answer from the options given below :

(A) A-II, B-I, C-IV, D-III (B) A-II, B-I, C-III, D-IV

(C) A-IV, B-II, C-III, D-I (D) A-IV, B-II, C-I, D-III

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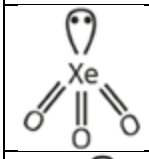
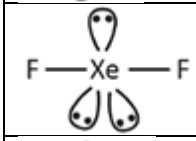
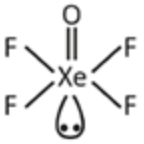
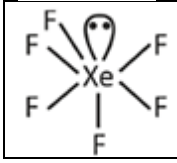
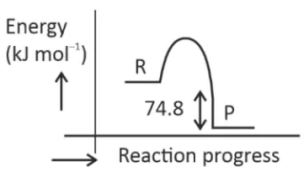
Correct Option: A

Solution:

Molecule	Hybridization	Shape
	sp^3	Pyramidal
	$sp^3 d$	Linear
	$sp^3 d^2$	Square pyramidal
	$sp^3 d^3$	Distorted Octahedral

65. $C(s) + 2H_2(g) \rightarrow CH_4(g); \Delta H = -74.8\ kJ\ mol^{-1}$. Which of the following diagrams gives an accurate representation of the above reaction? [R → reactants; P → products]

(A)



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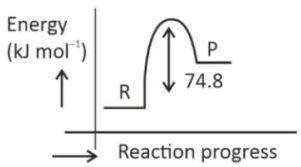

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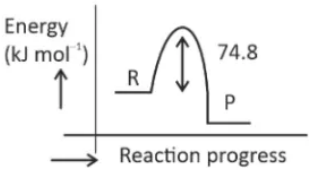
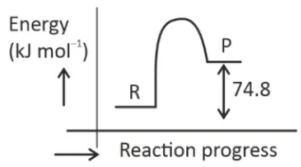


(D)



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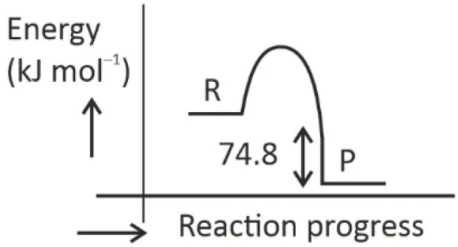
Correct Option: A

Solution:

$\Delta H = -74.8 kJmol^{-1}$, it is an exothermic reaction. So, accurate representation is



66. Match List-I with List-II:

List-I (Example)		List-II (Type of Solution)	
(A)	Humidity	(I)	Solid in solid
(B)	Alloys	(II)	Liquid in gas
(C)	Amalgams	(III)	Solid in gas
(D)	Smoke	(IV)	Liquid in solid

Choose the correct answer from the options given be

(A) A-II, B-IV, C-I, D-III (B) A-II, B-I, C-IV, D-

(C) A-III, B-I, C-IV, D-II (D) A-III, B-II, C-I, D-

NEET 20

Correct Option: B

Solution:

- Humidity is a solution of liquid in gas

- Alloy is a solution of solid in solid

- Amalgam is a solution of liquid in solid

- Smoke is a solution of solid in gas

67. The correct order of decreasing basic strength of the given amines is:

(A) N -methylaniline > benzenamine > ethanamine > N-ethylethanamine

(B) N-ethylethanamine > ethanamine > benzenamine > N-methylaniline

(C) N-ethylethanamine > ethanamine > N-methylaniline > benzenamine

(D) benzenamine > ethanamine > N-methylaniline > N-ethylethanamine

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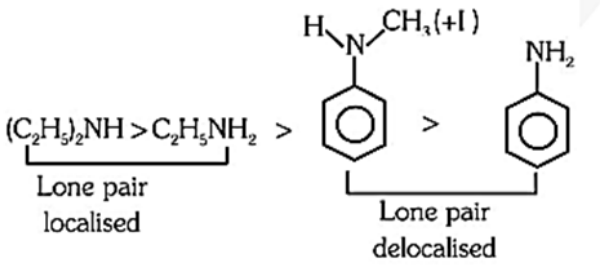
Correct Option: C

Solution:

Basic strength order

N-ethylethanamine > Ethanamine > N-methylaniline > Benzenamine



68. Among the following choose the ones with equal number of atoms.

A. 212 g of $Na_2CO_3(s)$ [molar mass = 106 g]

B. 248 g of $Na_2O(s)$ [molar mass = 62 g]

C. 240 g of $NaOH(s)$ [molar mass = 40 g]

D. 12 g of $H_2(g)$ [molar mass = 2 g]

E. 220 g of $CO_2(g)$ [molar mass = 44 g]

Choose the correct answer from the options given below:

(A) A, B and C only (B) A, B and D only

(C) B, C and D only (D) B, D and E only

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Correct Option: B

Solution:

No. of atoms = Atomicity × mole $\times N_A$

(A) No. of atoms $= 6 \times \frac{212}{106} \times N_A = 12N_A$

(B) No. of atoms $= 3 \times \frac{248}{62} \times N_A = 12\ N_A$

(C) No. of atoms $= 3 \times \frac{240}{40} \times N_A = 18\ N_A$

(D) No. of atoms $= 2 \times \frac{12}{2} \times N_A = 12\ N_A$

(E) No. of atoms $= 3 \times \frac{220}{44} \times N_A = 15\ N_A$

69. Match List-I with List-II.

List-I (Name of Vitamin)		**List-II (Deficiency disease)**	
(A)	Vitamin B12	(I)	Cheilosis
(B)	Vitamin D	(II)	Convulsions
(C)	Vitamin B2	(III)	Rickets
(D)	Vitamin B6	(IV)	Pernicious anaemia

Choose the correct answer from the options given be

(A) A-IV, B-III, C-I, D-II (B) A-I, B-III, C-II, D-

(C) A-II, B-III, C-I, D-IV (D) A-IV, B-III, C-II, D

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Correct Option: A

Solution:

List-I (Name of Vitamin)		**List-II (Deficiency disease)**
(A)	Vitamin B12	Pernicious anaemia
(B)	Vitamin D	Rickets
(C)	Vitamin B2	Cheilosis
(D)	Vitamin B6	Convulsions

70. The correct order of decreasing acidity of the followi aliphatic acids :-

(A) $(CH_3)_3CCOOH > (CH_3)_2CHCOOH > CH_3COOH > HCOOH$

(B) $CH_3COOH > (CH_3)_2CHCOOH > (CH_3)_3CCOOH > HCOOH$

(C) $HCOOH > CH_3COOH > (CH_3)_2CHCOOH > (CH_3)_3CCOOH$

(D) $HCOOH > (CH_3)_3CCOOH > (CH_3)_2CHCOOH > CH_3COOH$

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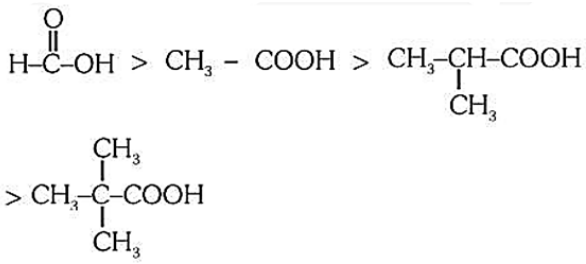
Correct Option: C

Solution:

Acidic strength $\propto -1$ effect

$\propto \frac{1}{\text{I effect}}$



71. Given below are two statements :
Statement I : Ferromagnetism is considered as an extreme form of paramagnetism.
Statement II : The number of unpaired electrons in a Cr^{2+} ion ($Z = 24$) is the same as that of a Nd^{3+} ion ($Z = 60$).
In the light of the above statements, choose the correct answer from the options given below:

(A) Both Statements I and Statement II are true

(B) Both Statement I and Statements II are false

(C) Statement I is true but Statement II is false

(D) Statement I is false but Statements II is true

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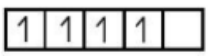
Correct Option: C

Solution:

Ferromagnetism > Paramagnetism.

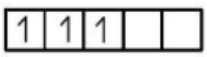
Statement-I is true.

$Cr^{2+} = 3d^4$



4 unpaired electrons.

$Nd^{3+} = 4f^3$



3 unpaired electrons.

Statement-II is false.

72. Match List I with List II

List-I (Mixture)	List-II (Method of separation)
(A) $CHCl_3 + C_6H_5NH_2$	(I) Distillation under reduced pressure
(B) Crude oil in petroleum industry	(II) Steam distillation
(C) Glycerol from spent-lye	(III) Fractional distillation
(D) Aniline - water	(IV) Simple distillation

Choose the correct answer from the options given bel

(A) A-IV, B-III, C-I, D-II (B) A-IV, B-III, C-II, D

(C) A-III, B-IV, C-I, D-II (D) A-III, B-IV, C-II, D

NEET 20

Correct Option: A

Solution:

List-I (Mixture)		List-II (Method of separation)
(A)	$CHCl_3 + C_6H_5NH_2$	Simple distillation
(B)	Crude oil in petroleum industry	Fractional distillation
(C)	Glycerol from spent-lye	Distillation under reduced pressure
(D)	Aniline - water	Steam Distillation

73. For the reaction $A(g) \rightleftharpoons 2\,B(g)$, the backward rea rate constant is higher than the forward reaction rate stant by a factor of 2500 , at 1000 K .
[Given : $R = 0.0831$ L atm mol^{-1} K^{-1}]
K_p for the reaction at 1000 K is

(A) 83.1 (B) 2.077×10^5

(C) 0.033 (D) 0.021

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Correct Option: C

Solution:

$$K_C = \frac{K_f}{K_b}$$
$$= \frac{K_f}{2500\, K_f}$$
$$= \frac{1}{2500}$$
$$K_p = K_C(RT)^{\Delta n_g}$$
$$= \frac{1}{2500}(0.0831 \times 1000)^1$$
$$K_p = 0.033$$

74. Given below are two statements :

Statement I : Benzenediazonium salt is prepared by the reaction of aniline with nitrous acid at $273 - 278$ K. It decomposes easily in the dry state.

Statement II : Insertion of iodine into the benzene ring is difficult and hence iodobenzene is prepared through the reaction of benzenediazonium salt with KI.

In the light of the above statements, choose the most appropriate answer from the options given below :

(A) Both Statement I and Statement II are correct

(B) Both Statement I and Statement II are incorrect

(C) Statement I is correct but Statement II is incorrect

(D) Statement I is incorrect but Statement II is correct

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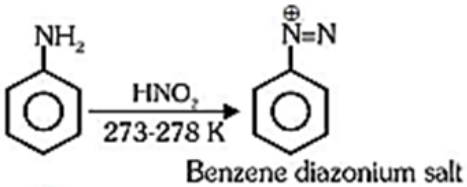
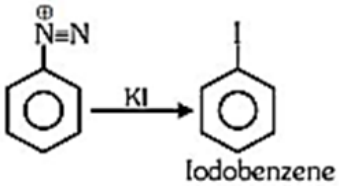
Correct Option: A

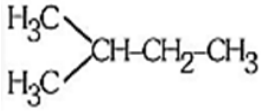
Solution:

Benzenediazonium chloride is a colourless crystalline solid. It is readily soluble in water and is stable in cold but reacts with water when warmed. It decomposes easily in the dry state.





75. How many products (including stereoisomers) are expected from monochlorination of the following compound?



(A) 2 (B) 3 (C) 5 (D) 6

NEET 20

Correct Option: D

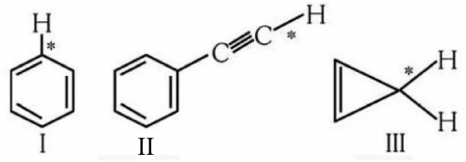
Solution:

For the monochlorination of

$CH_3CH(CH_3)CH_2CH_2CH_3$,

the total number of products including stereoisomers is

76. Among the given compound I-III, the correct ord bond dissociation energy of C – H bond marked witl :-



(A) II > I > III (B) I > II > III

(C) III > II > I (D) II > III > I

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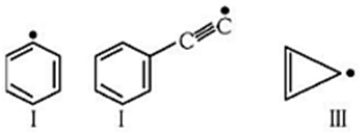
Correct Option: A

Solution:

Bond dissociation energy $\propto \frac{1}{\text{Stability of free radical from after C–H bond fission homolytically}}$



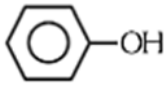
Stability order III > I > II

Bond dissociation energy order ⇒ II > I > III.

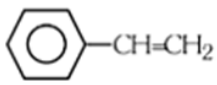
77. Which one of the following compounds does no colourize bromine water?

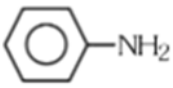
(A)

(B)



(C)



(D) 

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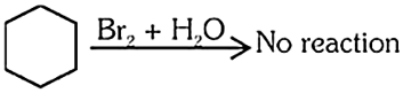
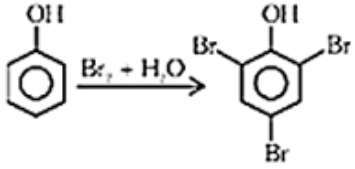
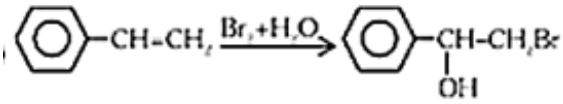
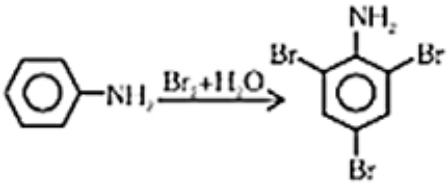
Correct Option: A

Solution:

(1) 

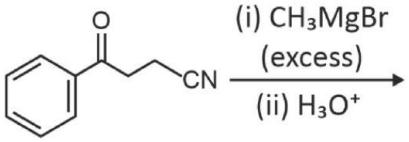
(2) 

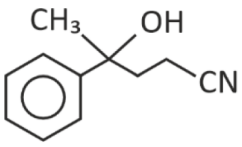
(3) 

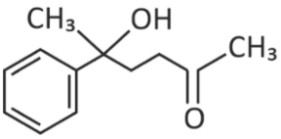
(4) 

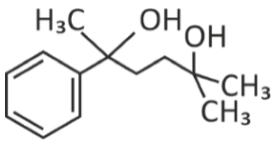
∴ Bromine water solution is decolourised in reaction (2), (3), (4) but not in (1)

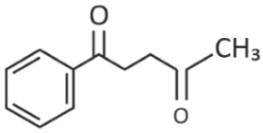
78. The major product of the following reaction is



(A) 

(B) 

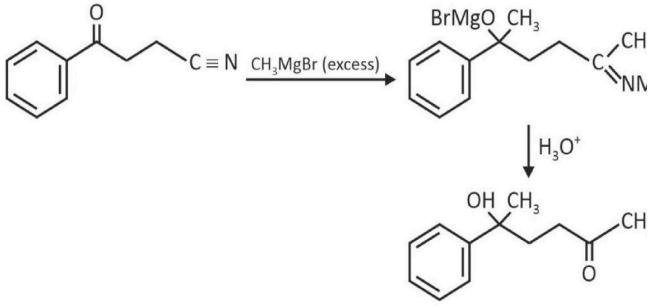
(C) 

(D) 

NEET 20

Correct Option: B

Solution:



79. Which of the following aqueous solution will exhibit highest boiling point?

(A) 0.01 M Urea (B) 0.01 M KNO_3

(C) 0.01 M Na_2SO_4 (D) 0.015 M $C_6H_{12}O_6$

NEET 20

Correct Option: C

Solution:

$\Delta T_b = iK_b \times m$

$\Delta T_b \propto i \times m$

By considering molarity same as molality

(1) 0.01 M Urea: $i \times m = 1 \times 0.01 = 0.01$

(2) 0.01 M KNO_3: $i \times m = 2 \times 0.01 = 0.02$

(3) 0.01 M Na_2SO_4: $i \times m = 3 \times 0.01 = 0.03$

(4) 0.015 M $C_6H_{12}O_6$: $i \times m = 1 \times 0.015 = 0.015$

$T_b' = T_b^* + \Delta T_b$

Higher the value of $(i \times m)$ more will be the boiling poi

80. Match List-I with List-II

List I		List II	
A.	Haber process	I.	Fe catalyst
B.	Wacker oxidation	II.	$PdCl_2$

C.	Wilkinson catalyst	III.	$[(PPh_3)_3 RhCl]$
D.	Ziegler catalyst	IV.	$TiCl_4$ with $Al(CH_3)_3$

Choose the correct answer from the options given below :

(A) $A-I, B-II, C-IV, D-III$ (B) $A-II, B-III, C-I, D-IV$

(C) $A-I, B-II, C-III, D-IV$ (D) $A-I, B-IV, C-III, D-II$

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Correct Option: C

Solution:

81. 5 moles of liquid X and 10 moles of liquid Y make a solution having a vapour pressure of 70 torr. The vapour pressures of pure X and Y are 63 torr and 78 torr respectively. Which of the following is true regarding the described solution?

(A) The solution shows positive deviation.

(B) The solution shows negative deviation.

(C) The solution is ideal.

(D) The solution has volume greater than the sum of individual volumes.

NEET 2025

Correct Option: B

Solution:

$P_{total} = X_x P_x^\circ + X_y P_y^\circ$

$= \frac{5}{15} \times 63 + \frac{10}{15} \times 78$

$= 21 + 52$

$= 73 torr$

Observed total pressure of solution is 70 torr.

It is less than calculated total pressure.

Hence, it shows negative deviation.

82. Sugar ' X '
A. is found in honey
B. is a keto sugar
C. exists in α and β - anomeric forms.
D. Is laevorotatory.
' X ' is :

(A) D-Glucose (B) D-Fructose

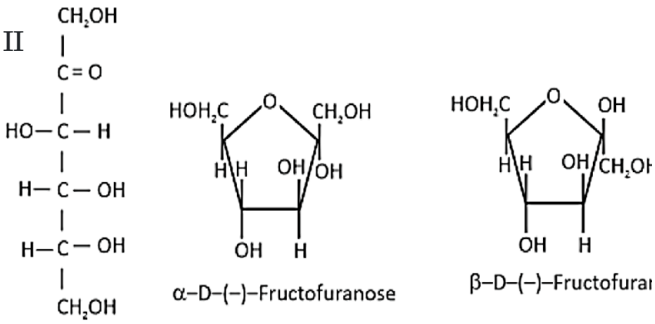
(C) Maltose (D) Sucrose

NEET 20

Correct Option: B

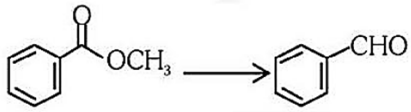
Solution:

D-Fructose is found in honey and is a keto sugar.



$D-(-)-$ Fructose

83. Identify the suitable reagent for the following conver



(A) (i) $LiAlH_4$, (ii) H^+/H_2O

(B) (i) $AlH(iBu)_2$ (ii) H_2O

(C) (i) $NaBH_4$, (ii) H^+/H_2O

(D) $H_2/Pd-BaSO_4$

NEET 20

Correct Option: B

Solution:

The suitable reagent for the conversion is

$(i) AlH(iBu)_2$, $(ii) H_2O$.

84. Given below are two statements: one is lab as Assertion (A) and the other is labelled as Reason (**Assertion (A) :**

undergoes S_N2 reaction faster than

Reason (R) : Iodine is a better leaving group becau its large size.
In the light of the above statements, choose the cc answer from the options given below:

(A) Both A and R are true and R is the correct explar tion of A.

(B) Both A and R are true but R is not the correct exp nation of A.

(C) A is true but R is false

(D) A is false but R is true

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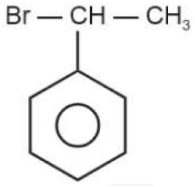
Correct Option: A

Solution:

Hence



is most reactive

Rate of $S_N2 \propto$ Leaving tendency of leaving group. Iodine is better L.G. than chlorine due to its bigger size.

85. The standard heat of formation, in kcal/mol of Ba^{2+} is : [Given : standard heat of formation of SO_4^{2-} ion (aq) $= -216 kcal/mol$, standard heat of crystallisation of $BaSO_4(s) = -4.5 kcal/mol$, standard heat of formation of $BaSO_4(s) = -349 kcal/mol$]

(A) -128.5 (B) -133.0 (C) +133.0 (D) +220.5

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Correct Option: A

Solution:

$S + 2O_2 + 2e^- \longrightarrow SO_4^{2-}$ $\Delta H_f = -216 kcal/mol$ .....(1)

$Ba^{2+}(g) + SO_4^{2-}(g) \longrightarrow BaSO_4(s)$ $\Delta H_{crystallisation} = -4.5 kcal/mol$ .....(2)

$Ba + S + 2O_2 \longrightarrow BaSO_4(s)$ $\Delta H_{f(BaSO_4)} = -349 kcal/mol$ .....(3)

$Ba(s) \longrightarrow Ba^{2+}(g) + 2e^-$ .....(4)

From equation $(1), (2)$ *and*

$So, -349 - (-4.5) - (-216)$

$So - 349 + 4.5 + 216$

$= -349 + 220.5$

$= -128.5 kcal/mol$

86. Total number of possible isomers (both structural as well as stereoisomers) of cyclic ethers of molecular formula C_4H_8O is :

(A) 6 (B) 8 (C) 10 (D) 11

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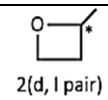
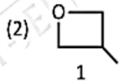
Correct Option: C

Solution:

For cyclic ethers O should be in ring * carbon here is chiral

(1) 
2(d, l pair)

(2) 
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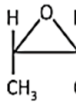
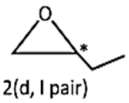
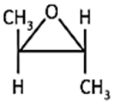
(3)
1

(4) 
(1)
Meso compo

(5) 
2(d, l pair)

(6)
1

(7) 
2(d, l pair)

Total number of isomers $= 2 + 1 + 1 + 1 + 2 + 1 + 1$
10

87. Identify the correct orders against the pro mentioned:

A. $H_2O > NH_3 > CHCl_3$ - dipole moment

B. $XeF_4 > XeO_3 > XeF_2$ - number of lone pairs on tral atom

C. $O - H > C - H > N - O$ - bond length

D. $N_2 > O_2 > H_2$ - bond enthalpy

Choose the correct answer from the options given be

(A) A, D only (B) B, D only (C) A, C only (D) B, C

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Correct Option: A

Solution:

		μ(D)
A.	H_2O	1.85
	NH_3	1.47
	$CHCl_3$	1.04

B. XeF_4 : 2 lone pairs of electron

XeO_3 : 1 lone pair of electron

XeF_2 : 3 lone pairs of electron

C. Order of Bond length :- $N - O > C - H > O - H$

D. N_2 Bond order is 3

H_2 Bond order is 1

O_2 Bond order is 2

88. Higher yield of NO in $N_2(g) + O_2(g) \rightleftharpoons 2NO(g)$ can be obtained at
[ΔH of the reaction $= +180.7$ kJ mol^{-1}]
A. Higher temperature
B. Lower temperature
C. Higher concentration of N_2
D. Higher concentration of O_2
Choose the correct answer from the options given below :

(A) A, D only (B) B, C only

(C) B, C, D only (D) A, C, D only

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Correct Option: D

Solution:

Yield of the product generally depends on

- Temperature

- Concentration of reactant(s) and product(s)

- Pressure

As this is an endothermic reaction ($\Delta H = +180.7$ kJ mol^{-1}), so, increase in temperature will shift equilibrium in forward direction to increase yield of NO.

Increase in concentration of reactants (N_2 and O_2) also shifts the equilibrium in forward direction and increase the yield of NO.

Hence, (A), (C) and (D) only will increase yield of NO.

89. If the rate constant of a reaction is 0.03 s^{-1}, how much time does it take for 7.2 mol L^{-1} concentration of the reactant to get reduced to 0.9 mol L^{-1} ?
(Given: log 2 = 0.301)

(A) 69.3 s (B) 23.1 s (C) 210 s (D) 21.0 s

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Correct Option: A

Solution:

$k = 0.03\ s^{-1}$

$$t = \frac{2.303}{k} \log \frac{a}{a-x}$$
$$= \frac{2.303}{0.03} \log \frac{7.2}{0.9}$$
$$= \frac{2.303}{0.03} \log 8$$
$$= \frac{2.303}{0.03} \times 3 \times \log 2$$
$$= \frac{2.303}{0.03} \times 3 \times 0.301$$
$$= 69.3\ s$$

90. Which one of the following reactions does NOT belo to "Lassaigne's test"?

(A) $Na + C + N \xrightarrow[\Delta]{} NaCN$

(B) $2Na + S \xrightarrow[\Delta]{} Na_2S$

(C) $Na + X \xrightarrow[\Delta]{} +NaX$

(D) $2CuO + C \xrightarrow[\Delta]{} 2Cu + CO_2$

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Correct Option: D

Solution:

Nitrogen, sulphur, halogens and phosphorus present in a organic compound are detected by "Lassaigne's test".

$Na + C + N \xrightarrow{\Delta} NaCN$
$2Na + S \xrightarrow{\Delta} Na_2S$
$Na + X \xrightarrow{\Delta} NaX_{(X=Cl,Br,I)}$

NEET 2025 Paper-(PCB) - ANSWER KEY

Que.	46	47	48	49	50	51	52	53	54	55
Ans.	D	B	B	A	A	C	C	B	D	A
Que.	56	57	58	59	60	61	62	63	64	65
Ans.	D	B	D	D	D	C	B	A, B	A	A
Que.	66	67	68	69	70	71	72	73	74	75
Ans.	B	C	B	A	C	C	A	C	A	D
Que.	76	77	78	79	80	81	82	83	84	85
Ans.	A	A	B	C	C	B	B	B	A	A
Que.	86	87	88	89	90					
Ans.	C	A	D	A	D					