

NEET 2026 Paper-(PCB)

46. Match List I with List II :

	List-I (Transition metal/ Compound/complex)		List-II (Catalytic Role)
A.	V_2O_5	I.	Preparation of ammonia from N_2/H_2 mixture
B.	Fe	II.	Polymerisation of alkynes
C.	$PdCl_2$	III.	Preparation of H_2SO_4 from SO_2
D.	Ni complex	IV.	Oxidation of ethyne to ethanal

Choose the correct answer from the options given below:

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

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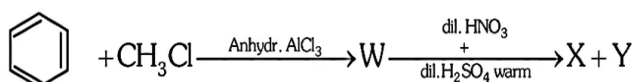
Correct Option: B

Solution:

Catalyst

V_2O_5	Preparation of H_2SO_4 from SO_2
Fe	$N_2 + 3H_2 \rightarrow 2NH_3$
$PdCl_2$	Oxidation of ethyne to ethanol
Ni complex	Polymerisation of alkynes

47. Two products X and Y are formed in the following reaction sequence:



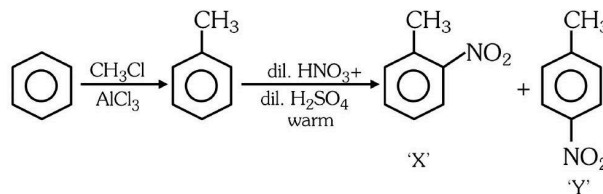
The suitable method that can be used for the separation of products X and Y is :

- (A) Continuous extraction (B) Differential extraction
(C) Sublimation (D) Fractional distillation

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Correct Option: D

Solution:



'X' & 'Y' can be separated using fractional distillation

48. Identify the incorrect statement from the following:

- (A) Oxygen exhibits only -2 oxidation state
(B) The order of catenation property of Group 14 elements is $C \gg Si > Ge \approx Sn$.
(C) Carbon has the ability to form $p\pi - p\pi$ multiple with itself.
(D) ECl_3 ($E = B \text{ and } Al$) is a monomer when $E = B$ a dimer when $E = Al$.

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Correct Option: A

Solution:

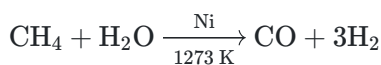
Oxygen can show variable oxidation states.

Compound	Ion	Oxidation State
H_2O	O^{2-}	-2
H_2O_2	O_2^{2-}	-1
KO_2	O_2^-	-1/2
O_3	O_3	0
OF_2	O^{2+}	+2
O_2F_2	O_2^+	+1

49. Methane reacts with steam at 1273 K in the presence of nickel catalyst to form :

- (A) CO and H_2
(B) CO and H_2O
(C) CO_2 and H_2
(D) CO_2 and H_2O

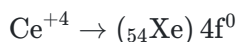
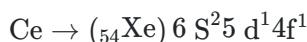
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Correct Option: A**Solution:**

50. Although +3 oxidation state is most common in lanthanoids, cerium still shows +4 oxidation state because :

- (A) After losing one more electron, it acquires $4f^{14}$ electronic configuration
 (B) Its nearest inert gas is Radon.
 (C) After losing one more electron, it acquires $4f^0$ electronic configuration.
 (D) Its atomic number is 61

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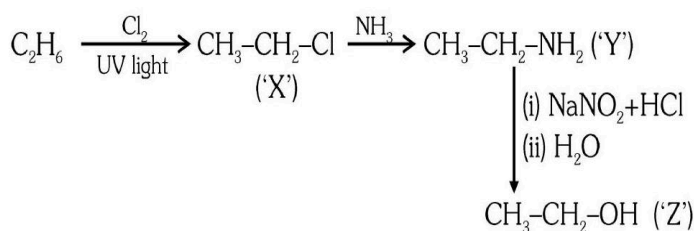
Correct Option: C**Solution:**

51. The major product Z formed in the following sequence of reactions is :



- (A) $\text{C}_2\text{H}_5 - \text{N} = \text{N} - \text{OH}$
 (B) $\text{C}_2\text{H}_5\text{OH}$
 (C) $\text{C}_2\text{H}_5\text{NO}_2$
 (D) $\text{C}_2\text{H}_5\text{NH}_2$

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Correct Option: B**Solution:**

52. Match List-I with List-II :

	List-I (Quantum numbers)			List-II (Orbital)
	'n'	'l'		
(A)	2	1	(I)	3d
(B)	4	0	(II)	2p
(IC)	5	3	(III)	4s
(D)	3	2	(IV)	5f

Choose the correct answer from the options given below

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

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Correct Option: A**Solution:**

- (A) $n = 2, l = 1$ 2p
 (B) $n = 4, l = 0$ 4s
 (C) $n = 5, l = 3$ 5f
 (D) $n = 3, l = 2$ 3d

53. A solution of copper sulphate is electrolysed for 10 minutes with a current of 1.5 amperes. The mass of copper deposited at cathode is : (Given : Molar mass of Cu = 63 g mol⁻¹; 1 F = 96487 C mol⁻¹)

- (A) 0.2938 g (B) 0.5876 g (C) 2.4036 g (D) 1.70 g

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Correct Option: A**Solution:**

$$w = \frac{E}{96500} \times I \times t$$

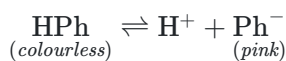
$$w = \frac{63}{2 \times 96500} \times 1.5 \times 10 \times 60$$

$$w = 0.293 \text{ g}$$

54. Phenolphthalein is used as an indicator for the titration of sodium hydroxide solution against a standard solution of oxalic acid. The colour change that is observed at a alkaline pH close to the equivalence point during this titration is :

- (A) pink to colourless (B) pinkish red to yellow
 (C) colourless to pink (D) yellow to pinkish red

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Correct Option: C**Solution:**

In acidic medium due to common ion effect equilibrium lies to the left so solution will be colourless.

In alkaline medium, the ionisation of HPh increases due to odd ion effect so the concentration of Ph^- ions increases which imparts pink colour to solution.

55. Identify the incorrect statement from the following:

- (A) The largest and the smallest species among Mg , Mg^{2+} , Al and Al^{3+} are Al and Mg^{2+} , respectively.
- (B) The IUPAC name of the element with atomic number 107 is Unnilseptium.
- (C) The similarity in behaviour of Li with Mg is referred to as, diagonal relationship.
- (D) The oxidation state and covalency of Al in $[\text{AlCl}(\text{H}_2\text{O})_5]^{2+}$ are 3 and 6 respectively.

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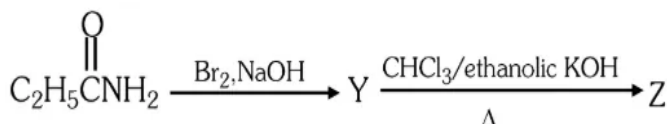
Correct Option: A**Solution:**

Size order $\text{Mg} > \text{Al} > \text{Mg}^{2+} > \text{Al}^{3+}$

Largest $\rightarrow \text{Mg}$

Smallest $\rightarrow \text{Al}^{3+}$

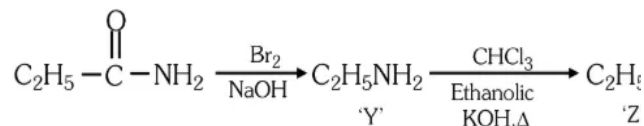
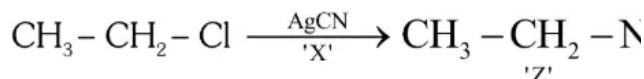
56. The following two reactions give the same foul smelling product Z.



X and Z, respectively, are:

- (A) $\text{X} = \text{AgCN}$; $\text{Z} = \text{C}_2\text{H}_5\text{CN}$
- (B) $\text{X} = \text{AgCN}$; $\text{Z} = \text{C}_2\text{H}_5\text{NC}$
- (C) $\text{X} = \text{KCN}$; $\text{Z} = \text{C}_2\text{H}_5\text{CN}$
- (D) $\text{X} = \text{KCN}$; $\text{Z} = \text{C}_2\text{H}_5\text{NC}$

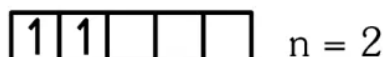
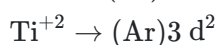
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Correct Option: B**Solution:**

57. The calculated 'spin-only' magnetic moment of Ti^{2+} ($3d^2$) is:

- (A) 3.87 BM (B) 4.90 BM (C) 2.84 BM (D) 5.92

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Correct Option: C**Solution:**

$$\begin{aligned} \text{spin only magnetic moment } (\mu) &= \sqrt{n(n+2)} \\ &= \sqrt{2(2+2)} \\ &= 2.84 \text{ B.M.} \end{aligned}$$

58. Match List-I with List-II:

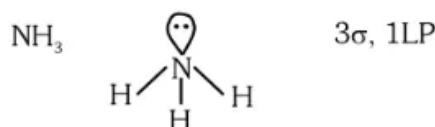
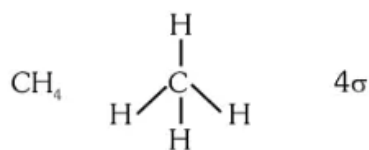
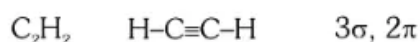
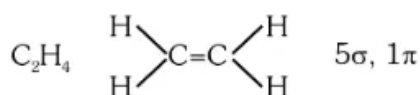
	List-I		List-II
(A)	C_2H_4	(I)	3σ bonds 2π bonds
(B)	C_2H_2	(II)	3σ bond one lone pair
(C)	CH_4	(III)	4σ bonds
(D)	NH_3	(IV)	5σ bonds 1π bond

Choose the correct answer from the option given below

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

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Correct Option: A**Solution:**



59. The functional group that can be identified through phthalein dye test is

- (A) Carboxylic acid (B) Alcohol
(C) Aldehyde (D) Phenolic

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Correct Option: D

Solution:

Phthalein dye test is used for identification of phenolic group.

60. Which one of the following is an ambidentate ligand?

- (A) Oxalate
(B) Ethane-1, 2-diamine
(C) Thiocyanate
(D) Ethylenediaminetetraacetate ion

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Correct Option: C

Solution:

Ambidentate $\rightarrow$ having more than one donor atom but at a time only one can form coordinate bond with C.M.T.



61. Identify the correct statements :

- (A) The molality of 2.5 g of ethanoic acid (Molar mass : 60 g mol^{-1}) in 75 g of benzene solution is 0.556 m .
(B) The molarity of a solution containing 5 g of NaOH (molar mass : 40 g mol^{-1}) in 450 mL of solution is 0.278 M at 298 K .
(C) Aquatic species are more comfortable in cold water.

(D) The solubility of gas increases with decrease in pressure.

(E) For a binary mixture of A and B , the number of moles of A and B are n_A and n_B respectively.

The mole fraction of B will be $x_B = \frac{n_B}{n_A + n_B}$

Choose the correct answer from the options given below

- (1) A, B and C only
(2) A, D and E only
(3) A and B only
(4) A and C only

(A) 1 (B) 2 (C) 3 (D) 4

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Correct Option: A

Solution:

(A)

$$\begin{aligned} m &= \frac{n_{\text{solute}}}{w_{\text{solvent}}(\text{in gram})} \times 1000 \\ &= \frac{2.5}{60 \times 75} \times 1000 \\ &= 0.556(\text{ T}) \end{aligned}$$

(B)

$$\begin{aligned} M &= \frac{n_{\text{solute}}}{V_{\text{solution}}(\text{in mL})} \times 1000 \\ &= \frac{5}{40 \times 450} \times 1000 \\ &= 0.278(\text{ T}) \end{aligned}$$

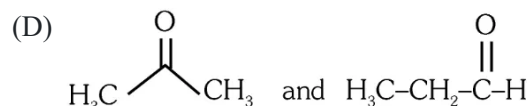
(C) Due to increased solubility of oxygen with decrease in temperature, aquatic species are more comfortable in cold water.

(D) Solubility increases with increase in pressure (F)

(E) $X_B = \frac{n_B}{n_A + n_B}$ (F)

62. The pair of molecules that are metamers among the following is :

- (A) $\text{CH}_3\text{OCH}_2\text{CH}_2\text{CH}_3$ and $\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$
(B) $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$ and $\text{CH}_3 - \text{CH}(\text{OH}) - \text{CH}_3$
(C) $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$ and $(\text{CH}_3)_2\text{CHCH}_2\text{CH}_3$



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Correct Option: A**Solution:**

Metamers



63. A bulb is rated at 150 watt, converting 8% energy into light. If energy of one photon is 4.42×10^{-19} J, how many photons are emitted by the bulb per second?

- (A) 27.2×10^{19} (B) 4.06×10^{19}
(C) 1.35×10^{19} (D) 2.71×10^{19}

NEET 2026**Correct Option: D****Solution:**

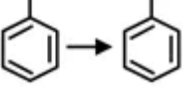
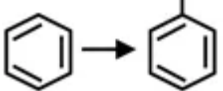
Power rating of bulb = 150 watt

$$\text{Energy converted into light} = 150 \times \frac{8}{100} = 12 \text{ J}$$

Number of photons emitted per second

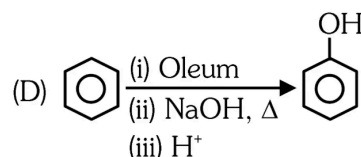
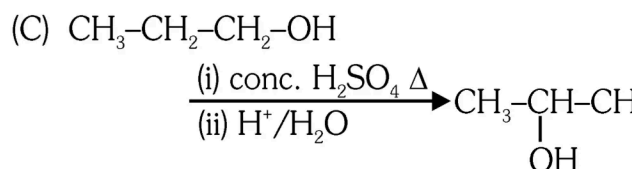
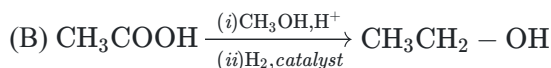
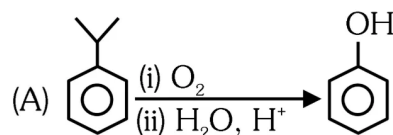
$$\begin{aligned} &= \frac{\text{Total energy}}{\text{Energy of one photon}} \\ &= \frac{12 \text{ J}}{4.42 \times 10^{-19} \text{ J}} \\ &= 2.71 \times 10^{19} \end{aligned}$$

64. Match List-I with List-II :

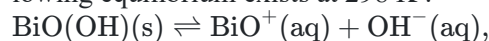
	List-I		List-II
A.	$\text{H}_3\text{C}-\text{CH}-\text{CH}_3$ 	I.	(i) oleum; (ii) NaOH, Δ ; (iii) H^+
B.	$\text{CH}_3\text{COOH} \rightarrow \text{CH}_3\text{CH}_2\text{OH}$	II.	(i) O_2 ; (ii) $\text{H}_2\text{O}/\text{H}^+$
C.	$\text{CH}_3\text{CH}_2\text{CH}_2\text{OH} \rightarrow$ $\text{CH}_3-\text{CH}-\text{CH}_3$ 	III.	(i) $\text{CH}_3\text{OH}, \text{H}^+$; (ii) H_2 , Catalyst
D.		IV.	(i) conc. $\text{H}_2\text{SO}_4, \Delta$; (ii) $\text{H}^+/\text{H}_2\text{O}$

Choose the correct answer from the option given below :

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

NEET 2026**Correct Option: C****Solution:**

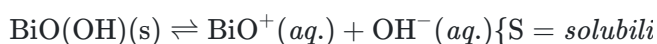
65. In a qualitative analysis, Bi^{3+} is detected by appearance of precipitate of $\text{BiO}(\text{OH})(\text{s})$. Calculate pH when the following equilibrium exists at 298 K :



$$K = 4 \times 10^{-10}$$

(Given : $\log 2 = 0.3010$)

- (A) 4.699 (B) 5.286 (C) 8.714 (D) 9.30

NEET 20**Correct Option: D****Solution:**

At eq. - S S

$$K = 4 \times 10^{-10} = K_{\text{sp}} \{ \text{for AB type; } K_{\text{sp}} = S^2 \}$$

$$S^2 = 4 \times 10^{-10}$$

$$S = 2 \times 10^{-5} \text{ M}$$

$$\text{So, } [\text{OH}^-] = S$$

$$= 2 \times 10^{-5}$$

$$\text{pOH} = 5 - \log 2$$

$$= 5 - 0.3010$$

$$= 4.699$$

$$\text{pH} = 14 - 4.699$$

$$= 9.301$$

66. The number of hydrogen atoms present in 5.4 g of u :

(Given : Molar mass of urea: 60 g mol^{-1} ,
 $N_A : 6.022 \times 10^{23} \text{ particles mol}^{-1}$)

- (A) 2.168×10^{22} (B) 2.168×10^{23}
 (C) 1.084×10^{22} (D) 1.084×10^{23}

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Correct Option: B**Solution:**Molecular formula of urea = NH_2CONH_2

Atomicity w.r.t. H = 4

Moles of urea = $\frac{5.4}{60}$ Moles of H = $\frac{5.4}{60} \times 4$ No. of H-atoms = $\frac{5.4}{60} \times 4 \times 6.02 \times 10^{23}$ = 2.168×10^{23}

67. The correct order of increasing metallic character of Na, Be, P, Mg and Si is:

- (A) $\text{Be} < \text{Si} < \text{P} < \text{Mg} < \text{Na}$
 (B) $\text{P} < \text{Si} < \text{Na} < \text{Mg} < \text{Be}$
 (C) $\text{P} < \text{Si} < \text{Be} < \text{Mg} < \text{Na}$
 (D) $\text{P} < \text{Mg} < \text{Be} < \text{Si} < \text{Na}$

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Correct Option: C**Solution:**

Metallic character $\propto \frac{1}{\text{Ionisation Energy}}$ $\text{Na} > \text{Mg} > \text{Be} > \text{Si} > \text{P}$

68. Match List-I with List-II :

	List-I Order of Reaction		List-II (Unit of rate constant)
A.	Zero order	I.	$\text{mol}^{-1} \text{L s}^{-1}$
B.	First order	II.	$\text{mol}^{-2} \text{L}^2 \text{s}^{-1}$
C.	Second order	III.	s^{-1}
D.	Third order	IV.	$\text{molL}^{-1} \text{s}^{-1}$

Choose the correct answer from the options given below:

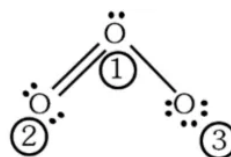
- (A) A-IV, B-III, C-II, D-I (B) A-IV, B-III, C-I, D-II
 (C) A-I, B-II, C-III, D-IV (D) A-IV, B-II, C-I, D-III

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Correct Option: B**Solution:**Unit of K = $\text{mol}^{1-n} \text{L}^{n-1} \text{time}^{-1}$

- A. Zero order ($n = 0$) : $\text{mol}^1 \text{L}^{-1} \text{s}^{-1}$
 B. First order ($n = 1$) : Unit of K = s^{-1}
 C. Second order ($n = 2$) : Unit of K = $\text{mol}^{-1} \text{L}^1 \text{s}^{-1}$
 D. Third order ($n = 3$) : Unit of K = $\text{mol}^{-2} \text{L}^2 \text{s}^{-1}$

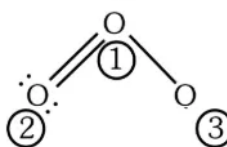
69.



The correct formal charges on oxygen atoms num 2, 1 and 3 respectively are :

- (A) 0, 0, 0 (B) -1, 0, +1 (C) +1, 0, -1 (D) 0, +1

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Correct Option: D**Solution:**

F.C. (formal charge) = (Total No. of valence electron in the free atom) - (Total no. of non bonding e (lone pair) (Total number of bonding (shared) electron)

$$(2) \text{ atom} \Rightarrow 6 - 4 - \frac{1}{2}(4) = 0$$

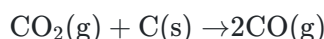
$$(1) \text{ atom} \Rightarrow 6 - 2 - \frac{1}{2}(6) = +1$$

$$(3) \text{ atom} \Rightarrow 6 - 6 - \frac{1}{2}(2) = -1$$

70. When 1 dm^3 of CO_2 gas is passed over hot coke, the volume of gaseous mixture after complete reaction at becomes 1.4 dm^3 . The composition of the gaseous mixture at STP is :

- (A) 0.6 dm^3 of CO, 0.8 dm^3 of CO_2
 (B) 0.8 dm^3 of CO, 0.8 dm^3 of CO_2
 (C) 0.6 dm^3 of CO, 0.4 dm^3 of CO_2
 (D) 0.8 dm^3 of CO, 0.6 dm^3 of CO_2

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Correct Option: D**Solution:**

$$\text{Initial } t = 0 \quad 1 \text{ L} \quad 0$$

$$\text{After reaction} \quad 1 - x \quad 2x$$

$$V_{\text{Total}} = (1 - x) + 2x$$

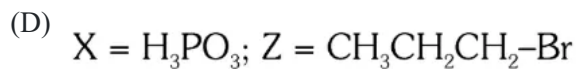
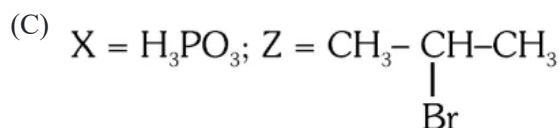
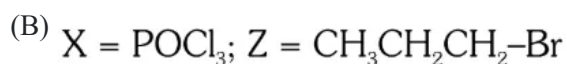
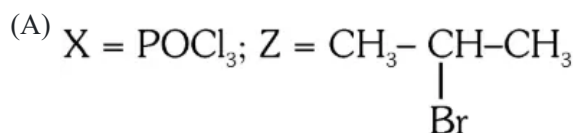
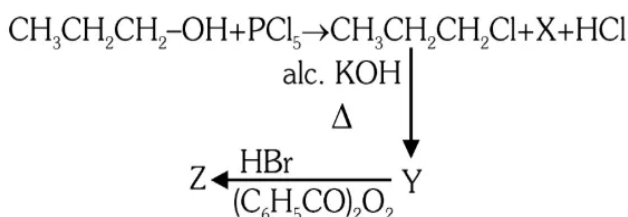
$$1.4 = 1 - x + 2x$$

$$x = 0.4$$

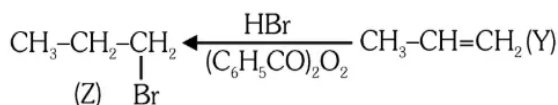
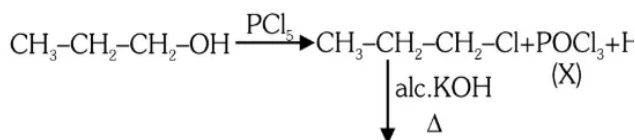
$$\text{So } V_{\text{CO}} = 0.8 \text{ dm}^3$$

$$\text{And } V_{\text{CO}_2} = 1 - x \\ = 0.6 \text{ dm}^3$$

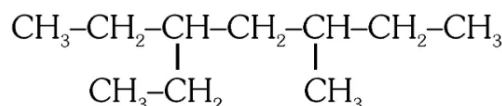
71. In the following reaction sequence, X and Z, respectively are :



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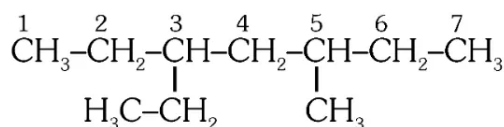
Correct Option: B**Solution:**

72. The correct IUPAC name of the following compound



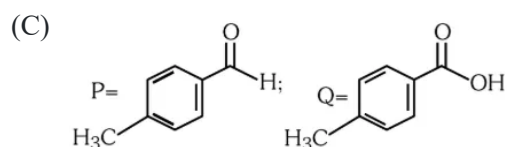
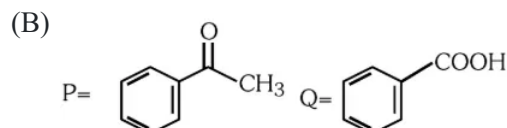
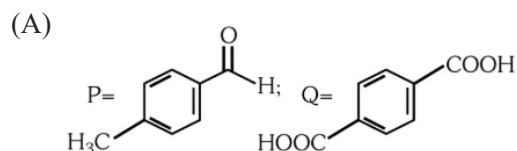
- (A) 3-ethyl-5-methylheptane (B) 3-methyl-5-ethylheptane
(C) 2, 4-diethylhexane (D) 3, 5-diethylhexane

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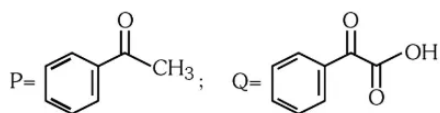
Correct Option: A**Solution:**

3-ethyl-5-methyl heptane

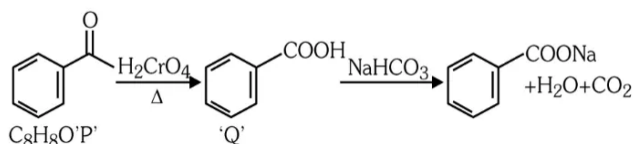
73. Compound P ($\text{C}_8\text{H}_8\text{O}$) gives a red orange precipitate with 2,4-DNP reagent and it does not reduce Fehling's reagent. On drastic oxidation with chromic acid, P gives an aromatic product Q that produces effervescence on treating with aq. NaHCO_3 . Compound P and Q, respectively, are :



(D)



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Correct Option: B**Solution:**

(P) Gives red orange ppt with 2,4-DNP

(P) Does not reduce Fehling's reagent

(P) On drastic oxidation, produces benzoic acid.

74. At a certain temperature, T(K), during a process, 500 J is absorbed by the system and work of 200 J is done by the system. Then change in internal energy of the system is:

(A) 700 J (B) 400 J (C) 300 J (D) 500 J

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Correct Option: C**Solution:**

$$q = +500 \text{ J}$$

$$w = -200 \text{ J}$$

$$\begin{aligned} \Delta U &= q + w \\ &= 500 - 200 \\ &= 300 \text{ J} \end{aligned}$$

75. Identify the incorrect statement from the following:

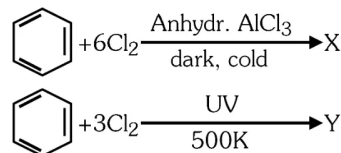
- (A) Phosphorus, arsenic and antimony show catenation property
- (B) P (C₂H₅)₃ and As (C₆H₅)₃ form $d\pi - d\pi$ bond with transition metals
- (C) Nitrogen can form $d\pi - p\pi$ bond with oxygen
- (D) Nitrogen can form $p\pi - p\pi$ multiple bonds with itself.

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Correct Option: C**Solution:**

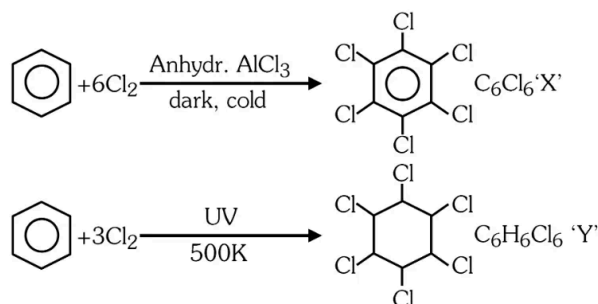
Both N and O are 2nd period element so they form only $p\pi - p\pi$ bond but not $p\pi - d\pi$ due to absence of d-orbital.

76. The number of chlorine atoms present in the products X and Y of the following reactions, respectively are :



(A) 3 and 3 (B) 6 and 6 (C) 6 and 3 (D) 3 and 6

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Correct Option: B**Solution:**

Number of chlorine atoms in 'X' and 'Y' are 6 & 6 respectively.

77. Match List I with List II.

	List I (Complex)		List II (Type of isomerism)
A.	[Pt (NH ₃) ₂ Cl ₂]	I.	Optical
B.	[Co(en) ₃] ³⁺	II.	Solvate
C.	[Co (NH ₃) ₅ NO ₂ Cl ₂]	III.	Geometrical
D.	[Cr (H ₂ O) ₆ Cl ₃]	IV.	Linkage

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

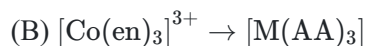
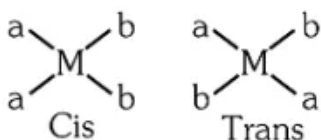
(C) A-III, B-I, C-IV, D-II (D) A-III, B-I, C-II, D-IV

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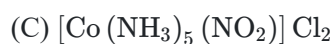
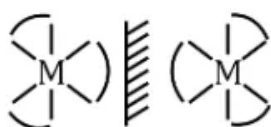
Correct Option: C**Solution:**

Geometry is square planar

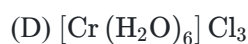
Square planar [Ma₂ b₂] shows G.I.



Due to presence of Bidentate ligand, shows optical isomerism.



Due to presence of NO_2 (Ambidentate ligand) (ONO) complex shows linkage isomerism.



Due to presence of H_2O ligand shows hydrated isomerism.



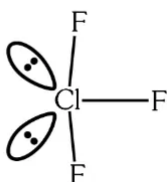
78. Identify the correct statement about ClF_3 from the following options :

- (A) It has T-shaped geometry with three lone pairs on Cl atom
- (B) It has T-shaped geometry with two lone pairs on Cl atom
- (C) It has a trigonal pyramidal geometry with two lone pairs on Cl atom
- (D) It has a planar trigonal geometry with two lone pairs on Cl atom

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Correct Option: B

Solution:



$\text{sp}^3 \text{d}$, T-shape

Two lone pair on central atom (chlorine)

79. In a test tube containing a salt, a few drops of H_2SO_4 was added, which gave colourless vapours having the smell of vinegar. The vapours turned the blue litmus paper red.

Identify the correct anion from the following:

- (A) Carbonate, CO_3^{2-}
- (B) Sulphide, S^{2-}
- (C) Acetate, CH_3COO^-
- (D) Sulphate, SO_4^{2-}

NEET 2019

Correct Option: C

Solution:



Vinegar smell

80. Mixture of chloroform and acetone forms a solution showing negative deviation from Raoult's law due to :

- (A) stronger intermolecular forces between chloroform and acetone molecules than those between chloroform and acetone molecules
- (B) formation of hydrogen bonding between acetone and chloroform
- (C) repulsive forces
- (D) increase in escaping tendency of molecules of each component

NEET 2019

Correct Option: B

Solution:



Due to H-bonding between chloroform and acetone



81. During Lassaigne's test, the elements present in an organic compound are converted from :

- (A) ionic form to ionic form (B) covalent form to ionic form

- (C) ionic form to covalent form (D) covalent form to covalent form

NEET 2026

Correct Option: B**Solution:**

During Lassaigne's test, the elements present in an organic compound are converted from covalent form to ionic form.

82. The correct statement with regard to the secondary structure of DNA/RNA is :

- (A) DNA possesses a double strand helix structure and contains thymine as one of the four bases.
 (B) DNA possesses a single strand helix structure and contains uracil as one of the four bases.
 (C) RNA possesses a double strand helix structure and contains uracil as one of the four bases.
 (D) RNA possesses a single strand helix structure and contains thymine as one of the four bases.

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Correct Option: A**Solution:**

DNA possesses double strand helix structure and contains thymine as one of the four bases.

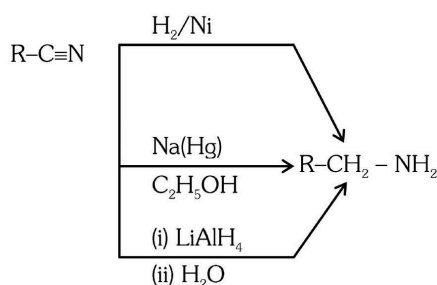
83. Select the reagents that reduce nitriles to primary amines :

- A. (i) LiAlH_4 ; (ii) H_2O
 B. $\text{Sn} + \text{HCl}$
 C. H_2/Ni
 D. $\text{Na}(\text{Hg})/\text{C}_2\text{H}_5\text{OH}$
 E. $\text{Br}_2/\text{aq. NaOH}$

Choose the correct answer from the options given below :

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

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Correct Option: C**Solution:**

84. Given below is an expression for the rate constant of a first order reaction occurring at a certain temperature $T(\text{K})$.

$$\ln k = 14.34 - \frac{1.25 \times 10^4}{T}$$

The energy of activation in kcal mol^{-1} for the reaction (Given : k is s^{-1} , $R = 1.987 \text{ cal mol}^{-1} \text{ K}^{-1}$)

- (A) 12.42 (B) 18.63
 (C) 14.34 (D) 24.84

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Correct Option: D**Solution:**

$$\therefore \ln k = 14.34 - \frac{1.25 \times 10^4}{T}$$

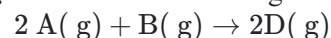
$$\ln k = \ln A - \frac{E_a}{RT}$$

$$\text{So } \frac{E_a}{R} = 1.25 \times 10^4$$

$$E_a = 1.25 \times 10^4 \times \frac{1.987}{1000} \text{ KCal mol}^{-1}$$

$$E_a = 24.84 \text{ KCal/mol}$$

85. Consider the following reaction :



$$\Delta U^\ominus = -10 \text{ kJ mol}^{-1} \text{ and } \Delta S^\ominus = -44 \text{ J K}^{-1} \text{ at } 298 \text{ K}$$

Identify the correct option with $\Delta G^\ominus$ for the reaction spontaneity of the reaction at 298 K.

(Given : $R = 8.31 \text{ J mol}^{-1} \text{ K}^{-1}$)

- (A) $+0.63568 \text{ kJ mol}^{-1}$, non-spontaneous
 (B) $-0.63568 \text{ kJ mol}^{-1}$, spontaneous
 (C) $-1.635 \text{ kJ mol}^{-1}$, spontaneous
 (D) $+1.635 \text{ kJ mol}^{-1}$, non-spontaneous

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Correct Option: A**Solution:**

$$\Delta G^\ominus = \Delta H^\ominus - T \Delta S^\ominus$$

$$\text{and } \Delta H^\ominus = \Delta U^\ominus + \Delta n_g RT$$

$$= -10 + \left[\frac{(-1)(8.3)(298)}{1000} \right]$$

$$= -10 - 2.4734$$

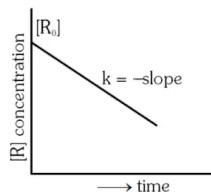
$$= -12.4734 \text{ kJ mol}^{-1}$$

$$\text{Now } \Delta G^\ominus = -12.4734 - \frac{(298)(-44)}{1000}$$

$$= -12.4734 + 13.112$$

$$= +0.6386 \text{ kJ mol}^{-1}, \text{Non spontaneous}$$

86. For a certain reaction $R \rightarrow \text{Product}$, the plot of concentration $[R]$ vs time has a negative slope as shown. The order of reaction is :



- (A) 1 (B) 2.5 (C) 2 (D) 0

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Correct Option: D**Solution:**

$\therefore$ [Reactant] v/s time graph is linear for zero order

$\therefore$ order = 0

87. Given below are certain reactions. Identify the reaction for which $K_p \neq K_c$.

- (A) $N_2(g) + O_2(g) \rightleftharpoons 2NO(g)$
 (B) $H_2O(g) + CO(g) \rightleftharpoons H_2(g) + CO_2(g)$
 (C) $N_2(g) + 3H_2(g) \rightleftharpoons 2NH_3(g)$
 (D) $H_2(g) + I_2(g) \rightleftharpoons 2HI(g)$

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Correct Option: C**Solution:**

$$K_p = K_c(RT)^{\Delta n_g}$$

- (1) $\Delta n_g = 0$
 (2) $\Delta n_g = 0$
 (3) $\Delta n_g = -2$
 (4) $\Delta n_g = 0$

88. At 298 K, a certain buffer solution contains equal concentrations of X^- and HX , K_b for X^- is 10^{-10} . What is the pH of this buffer solution?

- (A) 10 (B) 4 (C) 2 (D) 6

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Correct Option: B**Solution:**

$$pH = pK_a + \log \frac{[X^-]}{[HX]} \quad \left\{ \begin{array}{l} K_a \times K_b = 10^{-14} \\ K_a(HX) = 10^{-4} \end{array} \right\}$$

$$= 4 + \log 1$$

$$= 4$$

89. Calculate emf of the half cell given below :



$$E_{H_2/H^+}^\circ = 0 \text{ V}$$

$$\left(\text{Given : } \frac{2.303RT}{F} = 0.059, \right. \\ \left. \log 2 = 0.3010 \right)$$

- (A) -0.109 V (B) 0.109 V (C) 0.035 V (D) -0.035 V

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Correct Option: B**Solution:**

Cell reaction

$$H_{2(b)} \longrightarrow 2H_{(60)}^+ + 2e^- \\ 2 \text{ atm} \quad 2 \times 10^{-2}M \\ E_{OP} = 0 - \frac{0.059}{2} \log \frac{(2 \times 10^{-2})^2}{2} \\ = -\frac{0.059}{2} [\log (2 \times 10^{-4})] \\ = -\frac{0.059}{2} [0.3 - 4] \\ = -\frac{0.059}{2} [-3.7] \\ = +0.109 \text{ V}$$

90. Match List I with List II :

List I (Complex/ion)	List II (Shape/genometry)
A. $[Pt(Cl_2)(NH_3)_2]$	I. Octahedral
B. $[Co(NH_3)_6]Cl_3$	II. Trigonal bipyramidal
C. $[NiCl_4]^{2-}$	III. Square planar
D. $[Fe(CO)_5]$	IV. Tetrahedral

Choose the correct answer from the options given below

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

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Correct Option: A**Solution:**

(A)



$[\text{Pt}(\text{Cl}_2)(\text{NH}_3)_2]$ C.N. = 4

$\text{Pt}^{+2} - 5d^8$, all ligands

considered as S.F.L. So hybridisation will be dsp^2

So, Geometry is sq. planar (B)

$[\text{Co}(\text{NH}_3)_6]/\text{Cl}_3$

C.N. = 6, hybridisation = d^2sp^3

So, octahedral (C)

$[\text{NiCl}_4]^{2-}$

C.N. = 4

Ni^{+2} , Cl act as WFL, No pairing, hence hybridisation sp^3 So, Tetrahedral (D)

$[\text{Fe}(\text{CO})_5]$

C.N. = 5, hybridisation is dsp^3

So geometry is trigonal bipyramidal.

NEET 2026 Paper-(PCB) - ANSWER KEY

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