JEE-Main-22-01-2026 (Memory Based)
[EVENING SHIFT]
Chemistry

Question: The correct order of electron gain enthalpy (magnitude only) for group 16 elements is

Options:

(a) Te > Se > S > O

(b) S > Se > Te > O

(c) O > S > Se > Te

(d) S > O > Se > Te

Answer: (b)

Question: 100 g 98% by weight H_2SO_4 is mixed with 100g 49% by weight H_2SO_4. Mole fraction of H_2SO_4 in solution is

Options:

(a) 0.9

(b) 0.1

(c) 0.67

(d) 0.33

Answer: (d)

Question: Correct order of ionisation enthalpy is

Options:

(a) F >Cl > Cl^- > F^-

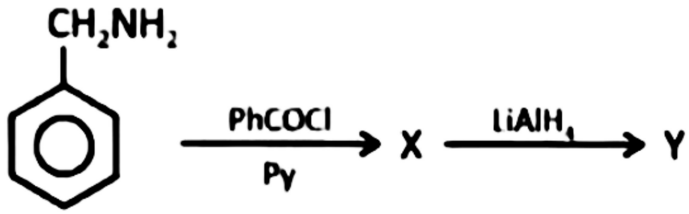
(b) F^- > Cl^- > F > Cl

(c) Cl > F > Cl^- > F^-

(d) F > Cl > F^- > Cl^-

Answer: (a)

Question: Consider the following reaction.



The correct structure of Y is

Options:

(a) $PhCH_2NHCOPh$

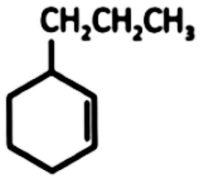
(b) $Ph\text{-}CH_2NHCH_2Ph$

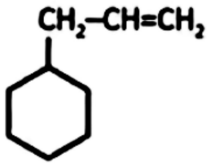
(c) $PhNH_2CH_2Ph$

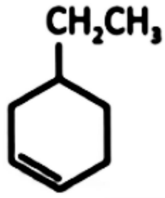
(d) $PhCH_3$

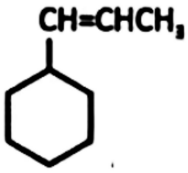
Answer: (b)

Question: Which of the following is a mixed oxide?
Options:
(a) Fe_2O_3
(b) PbO_2
(c) Pb_3O_4
(d) BaO_2
Answer: (c)

Question: An alkene on reductive ozonolysis gives methanal as one of the products. It's structure is
Options:
(a)


(b)


(c)


(d)


Answer: (b)

Question: Which of following is basic buffer?
Options:
(a) $NaOH + CH_3COONa$
(b) $NaOH + Na_2SO_4$
(c) $K_2SO_4 + H_2SO_4$
(d) $NH_4OH + NH_4Cl$
Answer: (d)

Question: Consider the following data:

$Na(s) + ½\ Cl_2(g) \rightarrow NaCl(s)$	**$\Delta H° = -411\ kJ/mole^{-1}$**
$Na(s) \rightarrow Na(g)$	**$\Delta H° = 107\ kJ/mole$**
$Cl_2(g) \rightarrow 2Cl(g)$	**$\Delta H° = -242\ kJ/mol$**

$Cl(g) + e^- \rightarrow Cl^-(g)$ **$\Delta H° = -355$ kJ/mole**
$Na(g) \rightarrow Na^+(g) + e^-$ **$\Delta H° = 502$ kJ/mole^{-1}**
Find out lattice energy of NaCl(s)
Options:
(a) -786 kJ mole^{-1}
(b) -628 kJ mol^{-1}
(c) -428 kJ mole^{-1}
(d) -393 kJ mole^{-1}
Answer: (a)

$$Br_2CH-CH_2-CH_2-CH_3 \xrightarrow[NaNH_2]{2\text{Equivalent}} X \xrightarrow[II.1\text{Eq. } CH_3CHBrCH_3]{I.1\text{Eq. } NaNH_2} Y$$

Question:
Options:
(a) 2-methyl hex-3-yne
(b) 5-methyl hex-2-yne
(c) Isopropyl but-1-yne
(d) 2-Methyl hex-2-yne
Answer: (a)

Question: Which of the following will behave as best reducing agent?
Given

$Al^{3+} + 3e^- \rightarrow Al$	**$E° = -1.66$ V**
$Co^{3+} + e^- \rightarrow Co^{2+}$	**$E° = 1.81$ V**
$Fe^{3+} + e^- \rightarrow Fe^{2+}$	**$E° = 0.77$ V**
$Cd^{2+} + 2e^- \rightarrow Cd$	**$E° = -0.4$ V**

Options:
(a) Al
(b) Co^{2+}
(c) Fe^{2+}
(d) Cd
Answer: (a)

Question: Given below are two statements.
Statement I: First ionisation enthalpy of Cr is greater than Mn.
Statement II: Second and third ionisation enthalpy of Cr is less than that of Mn.
In the light of above statements, choose the correct option.
Options:
(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
Answer: (b)

Question: Which of the following is the correct IUPAC name of complex?
$[Ni(PPh_3)_3(H_2O)_3]Cl_2$
Options:
(a) Triaquatris(triphenylphosphine)nickel(II) chloride
(b) Tris(triphenylphosphine)triaquanickel(II) chloride
(c) Triaquatris(triphenylphosphine)nickelate(II) chloride
(d) Triaquatris(triphenylphosphine)nickel(III) chloride

Answer: (a)

Question: Match the two columns: Glucose + 'X' → 'P'

List-I (Reagent-X)	List-II (Product-P)
A) Br_2/water	i) Glucosamine
B) Acetic anhydride (excess)	ii) Saccharic acid
C) Conc. HNO_3	iii) Glucose pentaacetate
D) NH_2OH	iv) Gluconic acid

Options:
(a) A-iv, B-ii, C-iii, D-i
(b) A-ii, B-iv, C-iii, D-i
(c) A-ii, B-iii, C-iv, D-i
(d) A-iv, B-iii, C-ii, D-i
Answer: (d)

Question: Consider two reactions having same pre-exponential factor (A) at same temperature (T).

$A \rightarrow^{E_{a_1}} B$

$C \rightarrow^{E_{a_2}} D$

$E_{a_1} = 5E_{a_2}$

Find out correct expression?
Options:

(a) $\frac{k_1}{k_2} = e^{-\frac{\varepsilon_{a_2}}{RT}}$

(b) $\frac{k_1}{k_2} = e^{-\frac{4\varepsilon_{a1}}{RT}}$

(c) $\frac{k_1}{k_2} = e^{-\frac{4\varepsilon_{a1}}{5RT}}$

(d) $\frac{k_1}{k_2} = e^{-\frac{4\varepsilon_{a2}}{5RT}}$

Answer: (c)

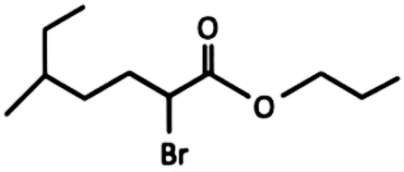
Question: Consider the given species
H_2S, H_2O, NH_3, NF_3 $CHCl_3$
The number of lone pair on central atom which lowest dipole moment.
Options:
(a) 0
(b) 1

(c) 2
(d) 3
Answer: (b)

Question: Consider the statements below
Statement-I: BCl_3 is covalent in nature
Statement-II: BCl_3 undergo hydrolysis to form $[B(OH)_4]^-$ and BH_3^+
In the light of above statements choose the correct option.
Options:
(a) Statement-I and statement-II both are correct
(b) Statement-I and Statement-II both are incorrect
(c) Statement-I correct statement-II incorrect
(d) Statement-I incorrect statement-II correct
Answer: (c)

Question: 36 g of A reacts with 54 g of B to form AB_2, if molar mass of A and B is respectively 60 and 80, then choose correct option from following.
Options:
(a) Limiting Reagent is A
(b) 90 g of AB_2 formed
(c) Limiting Reagent is B
(d) 50 g of AB_2 formed
Answer: (c)

Question: The correct IUPAC nomenclature of the following compound is



Options:
(a) Propyl-2-bromo-6-methyl heptanoate
(b) 2-Bromo-5-methyl-1-propyl heptanoate
(c) Propyl-2-bromo-5-ethyl hexanoate
(d) Propyl-2-bromo-5-methyl heptanoate
Answer: (d)

Question: Volume ratio of decimolar NH_4OH and decimolar HCl to give a solution of pH = 9.25 at 25°C is x : 1. Find x.
pK_b of NH_4OH = 4.75
Options:
Answer: (2)

Question: 5.8 g Aniline is converted into benzanilide with some reaction sequences. Calculate mass of benzanilide formed, if percentage yield of reaction is 82%

$$Ph - COCl + PhNH_2 \rightarrow^{NaOH} Benzanilide$$

Options:
Answer: (10)

Question: A cycloalkene (X) is treated with Br_2 and compound (Y) is formed with C : Br ratio 3 : 1. One mole of X required 1 mol of Br_2. Find composition (percentage) of 'Br' in Y compound (percentage)
Options:
Answer: (66)