

JEE-Main-04-04-2024 (Memory Based)
[EVENINGSHIFT]

Chemistry

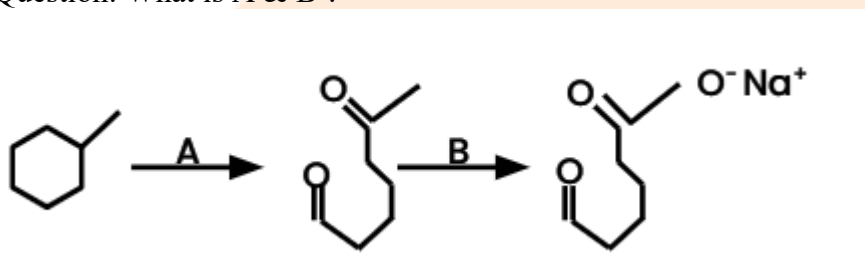
Question: Number of sigma and pi bonds in 2-oxo-hex-4-ynoic acid

Options:

- (a) 16
- (b) 18
- (c) 19
- (d) 17

Answer: (b)

Question: What is A & B ?



Options:

Answer: Solution : A- O_3 and Zn, CH_3COOH

B- NaOH, I_2

Question: Integer- 3 moles of gas is isothermal compressed from 60L to 40L through a constant pressure of 5 atm heat supplied is (-)_____

Options:

Answer: 100 L atm

Question: Vanillin from vanilla beans contains how many oxygen and pi bonds ?

Options:

- (a) 2-O and 2 pi bonds
- (b) 3-O and 4 pi bonds
- (c) 2-O and 3 pi bonds
- (d) 3-O and 2 pi bonds

Answer: (b)

Question: S - 1 : Correct order of ionization enthalpy is given as : $\text{F} > \text{Cl} > \text{Li} > \text{Na}$

S - 2 : Correct order of electron gain enthalpy is given as - ΔH_{eq} : $\text{Cl} > \text{F} > \text{Li} > \text{Na}$

Options:

- (a) S1-Correct ; S2-Incorrect
- (b) S1-Incorrect ; S2-Correct
- (c) S1-Correct ; S2-Correct
- (d) S1-Incorrect ; S2-Incorrect

Answer: (c)

Question: Which of the following have a pyramidal shape ?

Options:

- (a) $\text{S}_2\text{O}_3^{2-}$
- (b) SO_4^{2-}
- (c) SO_3^{2-}
- (d) $\text{S}_2\text{O}_7^{2-}$

Answer: (c)

Question: IUPAC name of Catechol is :-

Options:

- (a) Benzene, 1, 2 - diol
- (b) Benzene - 1, 3 - diol
- (c) Benzene - 1, 4 - diol
- (d) 3 - Hydroxyphenol

Answer: (a)

Question: Consider the following statements :

Statement I : The number of emitted photoelectrons increases with increase in frequency of incident light.

Statement II : Kinetic energy of emitted photoelectrons increases with increase in frequency of incident light

Options:

- (a) Statement I is true but statement II is false
- (b) Statement I is false but statement II is true
- (c) Both Statement I and statement II are true
- (d) Both Statement I and statement II are false

Answer: (b)

Question: MnO^{2+} conc H_2SO_4 when reacted with which salt yield greenish yellow gas. Salt X contains :

Options:

- (a) F^-
- (b) Br^-
- (c) I^-
- (d) Cl^-

Answer: (b)

Question: Adsorbents used in adsorption chromatography :

Options:

- (a) Silica gel
- (b) Alumina
- (c) Both A and B
- (d) None of the above

Answer: (c)

Question: Find no. of compound with non zero dipole moment

BeCl_2 , BCl_3 , NF_3 , H_2O , H_2S , CCl_4 , XeF_4 , CO_2 , HBr

Options:

- (a) 4
- (b) 3
- (c) 5
- (d) 6

Answer: (a)

Question: Pthalimide $\xrightarrow[\text{(ii) Benzyl Chloride}]{\text{(i) KOH}}$
Find no. of π bonds in _____

Options:

Answer: ()

Question: The correct order of ionisation enthalpy for Li, Na, Cl, F is :

Options:

- (a) $\text{Na} < \text{Li} < \text{Cl} < \text{F}$
- (b) $\text{Li} < \text{Na} < \text{Cl} < \text{F}$
- (c) $\text{Na} < \text{Li} < \text{F} < \text{Cl}$
- (d) $\text{F} < \text{Cl} < \text{Li} < \text{Na}$

Answer: (a)

Question: Angular momentum for 4th orbit ?

Options:

- (a) h/π
- (b) $3h/2\pi$
- (c) $8h/\pi$
- (d) $2h/\pi$

Answer: (d)

Question: $\text{SO}_2(\text{g}) + 1/2 \text{O}_2(\text{g}) \rightleftharpoons \text{SO}_3(\text{g}) ; K_c = 4.9 \times 10^{-2}$
 $2\text{SO}_3(\text{g}) \rightleftharpoons 2\text{SO}_2(\text{g}) + \text{O}_2(\text{g}) K_c = ?$

Options:

- (a) 410
- (b) 420
- (c) 415
- (d) 425

Answer: (c)

Question: Which of the following statement is incorrect ?

Options:

- (a) Atoms are indivisible particles, which cannot be created or destroyed chemical reaction.
- (b) Atoms combine in any ratio to form compounds.
- (c) Atoms reorganize in a chemical reaction.
- (d) Atoms of different elements have different masses and chemical properties.

Answer: (b)

Question: Which of the following are the correct statements about fuel cell.

Options:

- (a) S - 1 : It is a galvanic cell
- (b) S - 2 Fuel cell have efficiency of 40%
- (c) S - 3 : It is eco friendly
- (d) S - 4 : Aluminium as a catalyst used in this cell

Answer: (d)

Question: Arrange the following in increasing order of their first ionisation enthalpy :

Al, Ga, In, Tl, B





Options:

- (a) $Tl < In < Ga < Al < B$
- (b) $In < Al < Ga < Tl < B$
- (c) $In < Ga < Al < B < Tl$
- (d) $B < Al < Ga < In < Tl$

Answer: (b)

Question: Correct order of stability

Options:

- (a) 
- (b) 
- (c) 
- (d) 

Answer: (a)

Question: Find out the number of unpaired electrons in d-subshell for $[Co(H_2O)_6]^{3+}$

Options:

- (a) 3
- (b) 4
- (c) 0
- (d) 2

Answer: (c)

Question: Which of the following statement is incorrect ?

Options:

- (a) In homogeneous mixture composition is uniform
- (b) Compounds are formed when atoms of different element combine together in any ratio
- (c) Atoms of same element have identical atomic mass properties
- (d) In heterogeneous mixture composition is not uniform

Answer: (b)

Question: Match column I and column II

Column I	Column II
i) α - Glucose & α Galactose	a) Homologs
ii) α - Glucose & α - Fructose	b) Epimer
iii) α - Glucose & β - Glucose	c) Anomer
iv) α - Ribose & α - Glucose	d) Functional isomers

Options:

- (a) i - b, ii - d, iii - a, iv - c
- (b) i - b, ii - d, iii - c, iv - a
- (c) i - d, ii - b, iii - c, iv - a
- (d) i - a, ii - c, iii - d, iv - b

Answer: (b)

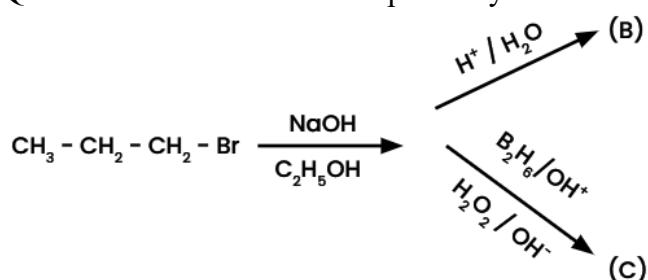
Question: Find the value of $x + y$ in given complex $[\text{Fe}(\text{NH}_3)_x(\text{CN})_y]^{-1}$

Options:

- (a) 6
- (b) 4
- (c) 5
- (d) 2

Answer: (a)

Question: What are B & C respectively ?



Options:

- (a) Propan - 1 - ol and propan - 2 - ol
- (b) Propan - 2 - ol and propan - 1 - ol
- (c) Both are propan - 1 - ol
- (d) Both are propan - 2 - ol

Answer: (b)

Question: Which of the following represents correct unit of slope of graph between molar conductivity (Δ_m) and $(\text{concn})^{1/2}$

Options:

- (a) $\text{S cm}^{1/2} \text{ mol}^{-1/2}$
- (b) $\text{S cm}^{3/2} \text{ mol}^{-2}$
- (c) $\text{S cm}^{7/2} \text{ mol}^{-3/2}$
- (d) $\text{S cm}^{5/2} \text{ mol}^{-3/2}$

Answer: (c)

Question: Calculate heat for isothermal process if expansion takes place from 20L to 60L against 5 atm pressure.

Options:

- (a) + 200
- (b) - 200
- (c) - 300
- (d) + 300

Answer: (a)

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S - 2 : Correct order of electron gain enthalpy is given as - $\Delta H_{eq} : Cl > F > Li > Na$

Options:

- (a) S1-Correct ; S2-Incorrect
- (b) S1-Incorrect ; S2-Correct
- (c) S1-Correct ; S2-Correct
- (d) S1-Incorrect ; S2-Incorrect

Answer: (c)