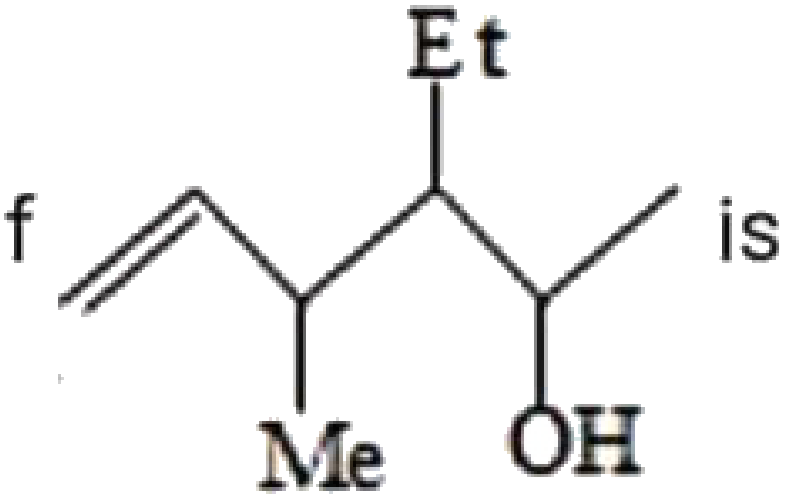
CHEMISTRY

BOOKS - NTA MOCK TESTS

JEE MOCK TEST 9

Chemistry

1. IUPAC name of



is :

A. 3-Ethyl-4-methylhex-5-en-2-ol

B. 4-Ethyl-3-methylhex-1-en-5-ol

C. 3-Methyl-4-ethylhex-1-en-5-ol

D. 4-Methyl-3-ethylhex-5-en-2-ol

Answer: A

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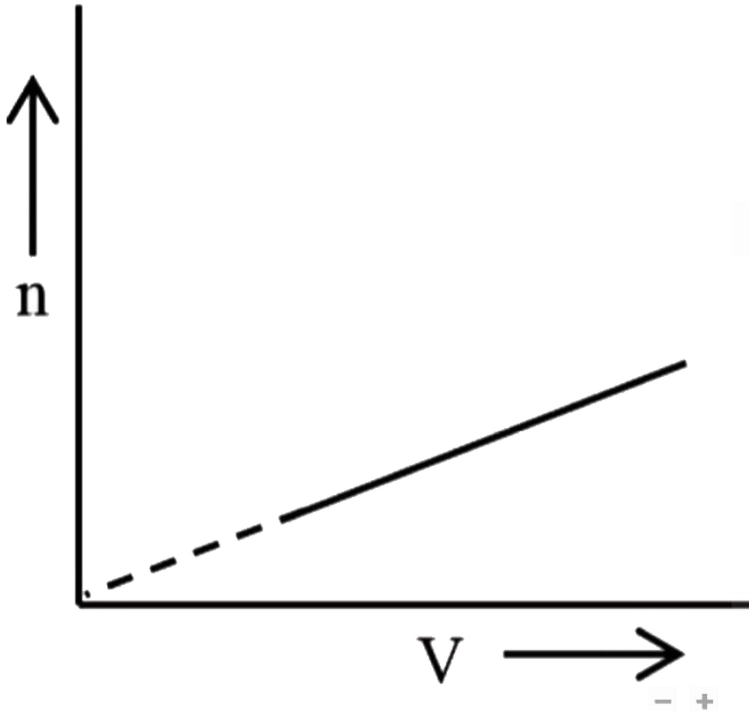
2. For a given one mole of ideal gas kept at 6.5 atm in a container of capacity 2.463L, the Avogadro proportionality constant for the

hypothesis is (see figure)



A. 0.406

B. 2.46

C. 2.4

D. none of these

Answer: B

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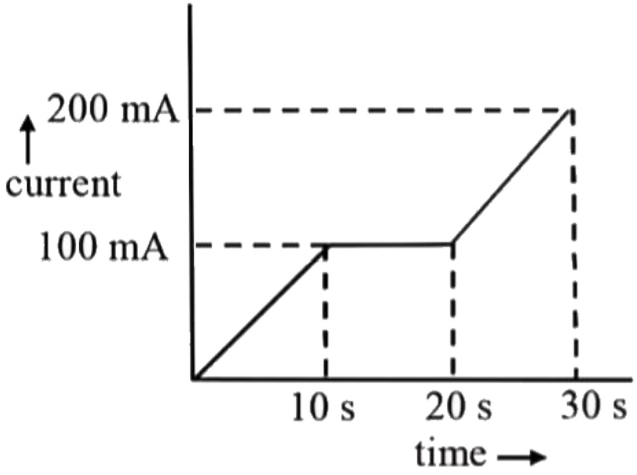
3. In a Cu-voltameter, mass deposited in 30s is 'm' g. If the time -current graph is shown in the following figure :



What is the electrochemical equivalent of Cu ?

A. $m/2$

B. $m/3$

C. $m/4$

D. $\frac{m}{63.5}$

Answer: B

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4. Let the solubilities of $Agbr$ in water and in $0.01McaBr_2$, $0.01MKBr$, and $0.05MAgNO_3$ be S_1, S_2, S_3 and S_4, respectively. Give the decreasing order of the solubilities.

A. $S_1 > S_2 > S_3 > S_4$

B. $S_1 > S_3 > S_2 > S_4$

C. $S_2 > S_1 > S_3 > S_4$

D. $S_4 > S_3 > S_1 > S_2$

Answer: B

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5. Which of the following pair of compounds is expected to exhibit same colour in aqueous solution?

A. $VOCl_2, ZnSO_4$

B. $MnCl_2, ZnSO_4$

C. $CuCl_2, HgCl_2$

D. $CuCl_2, VOCl_2$

Answer: D

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6. Among the following, the molecule with the highest dipole moment is :

A. CH_3Cl

B. CH_2Cl_2

C. $CHCl_3$

D. CCl_4

Answer: A

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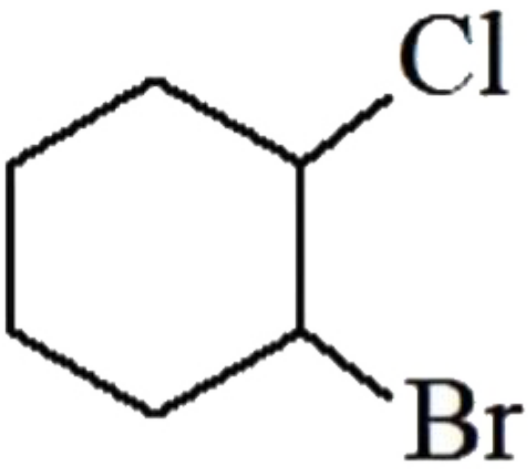
7. Determine the number of stereoisomers in the given compound



A. 2

B. 4

C. 8

D. 16

Answer: B

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8. Which fo the following processes involves smelting

A. $ZnCO_3 \rightarrow ZnO + CO_2$

B. $Fe_2O_3 + 3C \rightarrow 2Fe + 3CO$

C. $2PbS + 3O_2 \rightarrow 2PbO + 2SO_2$

D. $Al_2O_3.2H_2O \rightarrow Al_2O_3 + 2H_2O$

Answer: B

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9. Which of the following is not formed in iodoform reaction ?

A. CH_3COCH_2I

B. ICH_2COCH_2I

C. CH_3COCHI_2

D. CH_3COCI_3

Answer: B

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10. The compound A on heating gives a colourless gas and a residue that is dissolved in water to obtain B. Excess of CO_2 is bubbled

through aqueous solution of B,C is formed which is recovered in the solid form.Solid C on gentle heating gives back A. The compound is

A. $CaCO_3$

B. Na_2CO_3

C. K_2CO_3

D. $CaSO_4.2H_2O$

Answer: A

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11. TlI_3 is an ionic compound. In the aqueous solution it provides -

A. Tl^+ and I_3^-

B. Tl^{3+} and I^-

C. Tl^+, I^- and I_2

D. Tl^+, I^- and I_2

Answer: A

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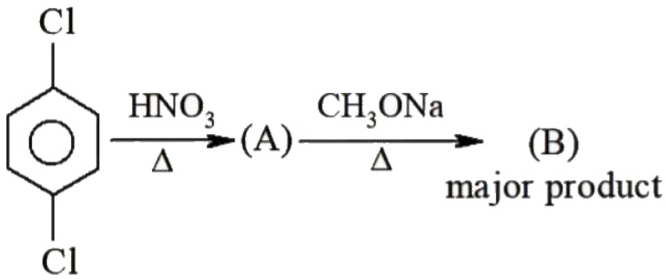
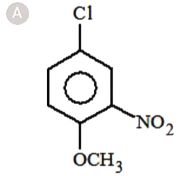
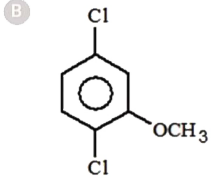
12.


Cl
HNO3
Δ
(A)
CH3ONa
Δ
(B)
major product
Cl

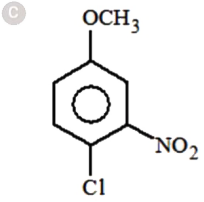
A.

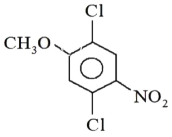

A
Cl
NO2
OCH3

B.


B
Cl
OCH3
Cl

C.


C
OCH3
NO2
Cl

D. 

Answer: A

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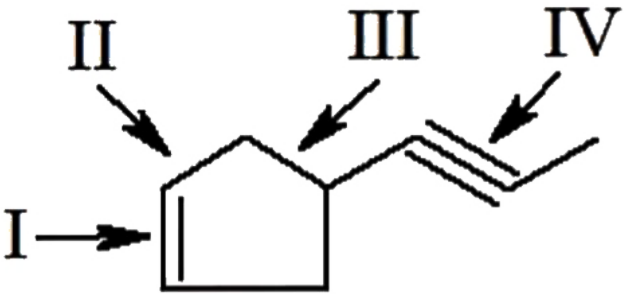
13. What is correct increasing oreder of bond lengths of bond indicated as I,II,III and IV in

following compounds?



A. $I < II < III < IV$

B. $II < III < IV < I$

C. $IV < II < III < I$

D. $IV < I < II < III$

Answer: D

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14. Identify the correct decreasing order of acid strength for the following compounds

(I) HClO, (II) HBrO, (III) HIO

A. $I > II > III$

B. $II > I > III$

C. $III > II > I$

D. $I > IIi > II$

Answer: A

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15. The equilibrium constant K_{p_1} and K_{p_2} for the reactions $X \Leftrightarrow 2Y$ and $Z \Leftrightarrow P + Q$, respectively are in the ratio of $1:9$. If the degree of dissociation of X and Z be equal, then the ratio of total pressure at these equilibrium is:

A. $1:36$

B. $1:1$

C. $1:3$

D. $1:9$

Answer: A

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16. The correct statement on the isomerism associated with the following complex ions.

$I\left[Ni(H_2O)_5NH_3\right]^{2+}$

$II.\ \left[Ni(H_2O)_4(NH_3)_2\right]^{2+}$

$III.\ \left[Ni(H_2O)_3(NH_3)_3\right]^{2+}$

A. (a) and (b) show only geometrical isomerism

B. (a) and (b) show geometrical and optical isomerism

C. (b) and (c) show geomertical and optical isomerism

D. (b) and (c) show only geomertical isomerism

Answer: D

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17. The de-Broglie wavelength of an $\alpha-$ particles at a voltage V is

(Given that $\alpha-$ particle has 2 units positive charge and 4 units mass)

A. $\lambda=\frac{12.3}{\sqrt{V}}\text{Å}$

B. $\lambda=\frac{0.286}{\sqrt{V}}\text{Å}$

C. $\lambda=\frac{0.101}{\sqrt{V}}\text{Å}$

D. $\lambda=\frac{0.856}{\sqrt{V}}\text{Å}$

Answer: C

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18. An amino acid having isoelectric point below 7 (at $25^{\circ}C$) , when kept in a alkaline medium present in an electric field will show migration towards -

A. Cathode

B. Anode

C. Either Cathode / Anode

D. No migration

Answer: B

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19. Chemisorption

A. involves the weak attractive interactions between adsorbent and adsorbate

B. is irreversible in nature

C. decreases with increase of temperature

D. involves multilayer formation of adsorbent on adsorbate

Answer: B

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20. A 5.25% solution of a substance is isotonic with a 1.5% solution of urea (molar mass $= 60 gmol^{-1}$) in the same solvent. If the densities of both the solutions are assumed to

be equal to $1.0gcm^{-3}$, molar mass of the substance will be:

A. $210gmol^{-1}$

B. $90.0gmol^{-1}$

C. $115.0gmol^{-1}$

D. $105.0gmol^{-1}$

Answer: A

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21. How many of the following statements is / are correct ?

(1)The order of splitting energy is $PtCl_4^{2-} > PdCl_4^{2-} > NiCl_4^{2-}$ (consider only magnitude)

(2) $\left[Ni(CO)_4\right]$ is diamagnatic whereas $\left[Ni(H_2O)_6\right]^{2+}$ is paramagnetic

(3) $\left[Ni(CN)_4\right]^{2-} \rightarrow dsp^2$ hybridized and paramagnetic

(4) The magnetic moment of $K_3\left[Fe(CN)_6\right]$ is $\sqrt{3}$ B.M

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$\left[Ni(H_2O)_6\right]^{2+}$ is paramagnetic

C. $\left[Ni(CN)_4\right]^{2-} \rightarrow dsp^2$ hybridized and

paramagnetic

D. The magnetic moment of $K_3\left[Fe(CN)_6\right]$

is $\sqrt{3}$ B.M

Answer: D

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22. One mole of an ideal monoatomic gas is mixed with one mole of an ideal diatomic gas. The molar specific heat of the mixture at constant volume is (in Calories)

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23. Number of oxygen atoms shared per SiO_4^{4-} tetrahedron in single chain silicates

are _____.

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24. Calculate the percentage of packing efficiency in simple cubic unit cell.

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25. How many of the following compounds will form acetic acid on reaction with acidic $KMnO_4$?

Prop-1- ene, 2-Methylbut-2-ene, 2-Methylpropene,But-2-ene, Cyclohexene.

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