PAPER SOLUTION

From Meerut

JEE MAIN

2025

JAN	SHIFT
24	1st

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CVPS INTEGRATED STAR COURSE

JEE MAIN 2025 LIVE PAPER DISCUSSION

#Q. The unusual difference in M.P. and B.P. of Oxygen and sulphur can be explained by:

A Electronegativity

B Atomicity

C Electron affinity

D Ionisation energy

Ans. (B)

#Q. Identify the strongest oxidising agent among the following

A Ce^{2+}

B Ce^{4+}

C Eu^{2+}

D Eu^{4+}

Ans. (B)

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#Q. Ribose present in DNA is:

(A) It is a pentose sugar

(B) Present in pyronose form

(C) α anomeric carbon is present

(D) Present in D configuration

(E) It is reducing sugar in free form

Choose the correct statements:

A. A, C & E only

B. A, D & E only

C. A & E only

D. A, B, C, D & E

Ans. (B)

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#Q. Given are two statements:

Statements I : Duma's method is used for detection of Nitrogen.

Statements II : In Duma's Method, Conc. H_2SO_4 is used.

(A) Both statements I & statements II are correct.

(B) Both statements I & statements II are incorrect.

(C) statements I is correct but statements II is incorrect.

(D) statements I is incorrect but statements II is correct.

Ans. (C)

#Q. If the K_{sp} of $Cr(OH)_3$ is 1.6×10^{-30} M^4. The molar solubility of salt in water is 1.56×10^{-x}, then value of x is:

Ans. 8

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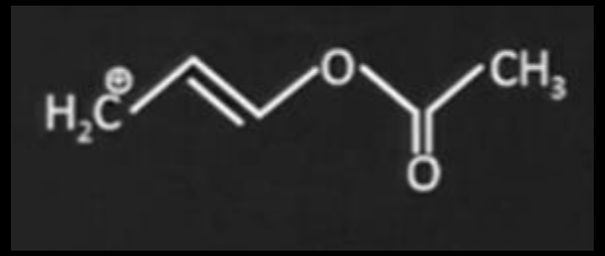
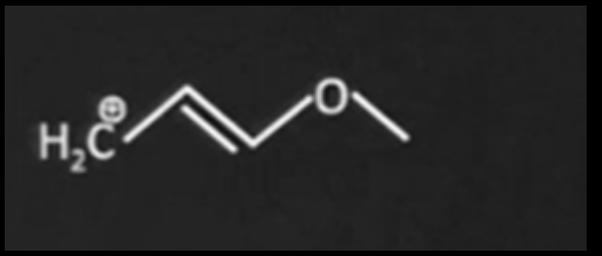
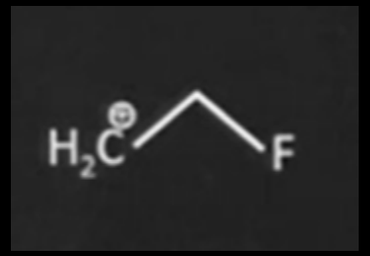
#Q. Identify the most stable carbocation among the following–

A 

B 

C 

D 

Ans. (B)

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#Q. Which of the following is most reactive towards nucleophilic addition reaction?

(A) Para methyl benzaldehyde

(B) Para–nitro benzaldehyde

(C) Acetophenone

(D) Benzaldehyde

Ans. (B)

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#Q. In H_2O, NH_3 and CH_4

(A) All central atoms are sp^3 hybridised

(B) Order of dipole moment is $CH_4 < NH_3 < H_2O$

(C) NH_3, in H_2O is basic in nature, NH3 and H_2O are Bronsted–Lowry acid and based respectively.

(D) Bond angle of H_2O, NH_3 and CH_4 respectively are 104.5^o, 107^o, and 109.5^o.

A. A and B only

B. A, B and C only

C. A, B and D only

D. A, B, C and D

Ans. (C)

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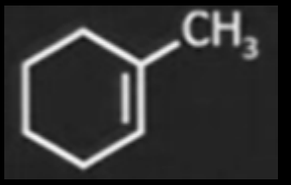
#Q. Which of the following is most reactive towards aq. HBr?

A 

B 

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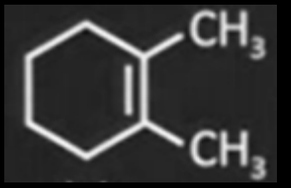
D 

Ans. (A)

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#Q. At the freezing point of water, process is non spontaneous, at boiling point it becomes spontaneous (Temperature varies linearly with pressure). The correct options is:

(NCERT Thermodynamics Page No – 162, class – XI Part – 1)

A $\Delta H = +ve$, $\Delta S = +ve$

B $\Delta H = -ve$, $\Delta S = -ve$

C $\Delta H = +ve$, $\Delta S = -ve$

D $\Delta H = -ve$, $\Delta S = +ve$

Ans. (A)

#Q. $Fe^{2+} + Ag^{+} \longrightarrow Fe^{3+} + Ag; E^{o}_{net}$ _____?

$Ag^{+} + e^{-} \longrightarrow Ag; E^{o} = x$

$Fe^{2+} + 2e^{-} \longrightarrow Fe; E^{o} = y$

$Fe^{3+} + 3e^{-} \longrightarrow Fe; E^{o} = z$

The value of E^{o}_{net} = ?

A x + y – z

B x + 3y – 2z

C y – 2x

D x – 3z + 2y

Ans. (D)

#Q. In the industrial preparation of $KMnO_4$, the oxidative fusion of pyrolusite ore is done with an alkali, which first produces–

A K_2MnO_6

B K_2MnO_4

C $KMnO_4$

D K_2MnO_3

Ans. (B)

#Q. Consider the given reactions and choose proper solvent.

Statement I : $CH_3-CH_2-CH_2-CH_2-Cl \xrightarrow{OH^-} CH_3-CH_2-CH_2-CH_2-OH$

Statement II : $CH_3-CH_2-CH_2-CH_2-Cl \xrightarrow[SN^2]{R_3N} CH_3-CH_2-CH_2-CH_2-\overset{\overset{R}{|}}{\underset{\underset{R}{|}}{N^+}}-R$

(A) Statement–I Polar protic, Statement–II polar aprotic

(B) Statement–I Polar aprotic, Statement–II polar protic

(C) Statement–I Polar aprotic, Statement–II polar aprotic

(D) Statement–I Polar protic, Statement–II polar protic

Ans. (C)

#Q. 2.32×10^3 kg of Fe_3O_4 reacts with 2.8×10^2 kg of CO according to the following reaction:

$Fe_3O_4 + CO \longrightarrow CO_2 + Fe$

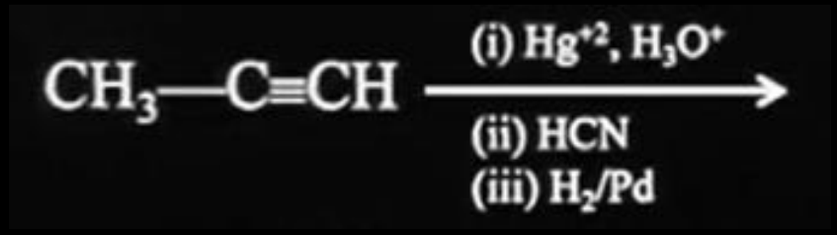
If x kg of Fe is formed. Find the value of x?

Ans. 420

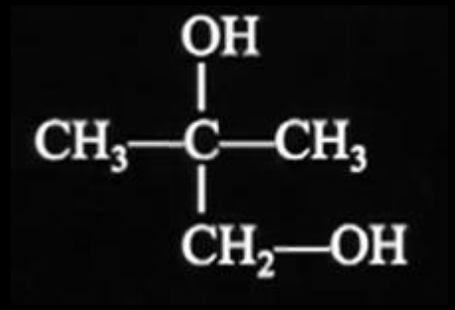
#Q. When x g of Benzoic acid reacts with $NaHCO_3$, 11.2 L of CO_2 is released at 273 K and 1 atm pressure, calculate mass of benzoic acid in gram?

Ans. 61

#Q. Find product of following sequence of reaction.



A



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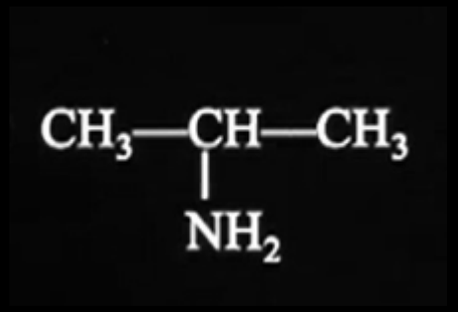
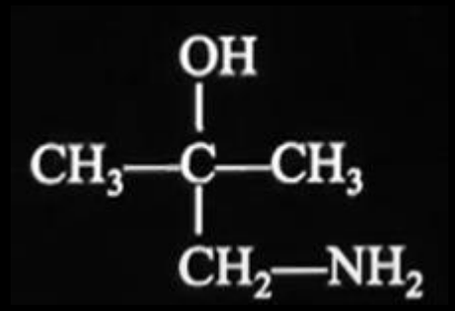


C



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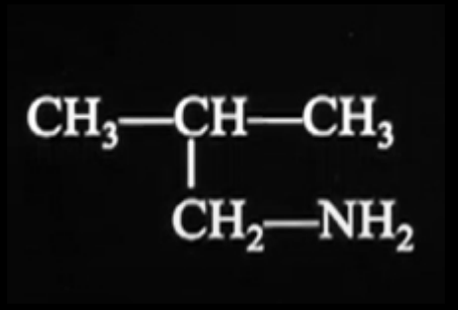

Ans. (C)

#Q. How many of the following cation shows characteristic coloured ppt, with $K_4[Fe(CN)_6]$?

Cu^{2+}, Ca^{2+}, Ba^{2+}, Fe^{3+}, Zn^{2+}, Mg^{2+}, Mn^{2+}

Ans. 3

#Q. Consider the following reaction of a complex compound.

$CoCl_3.5NH_3 \xrightarrow{H_2O}$ Total 3 moles of ions

$\downarrow AgNO_3$ Soln

2 moles of AgCl precipitated

The formula of complex is

(A) $[Co(NH_3)_5Cl]Cl_2$

(B) $[Co(NH_3)_6]Cl_2$

(C) $[Co(NH_3)_3Cl_3].3NH_3$

(D) $[Co(NH_3)_4Cl_2]Cl$

Ans. (A)

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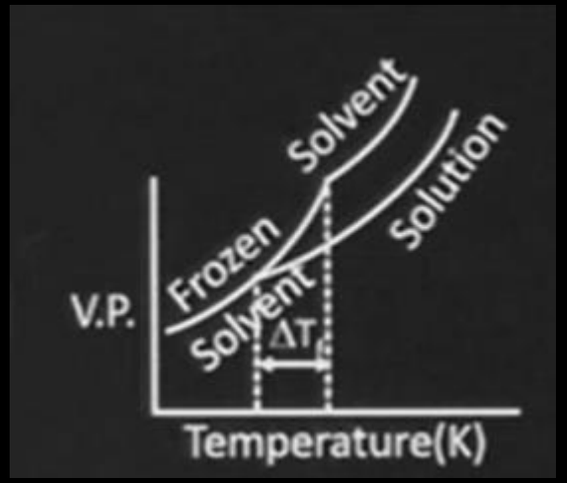
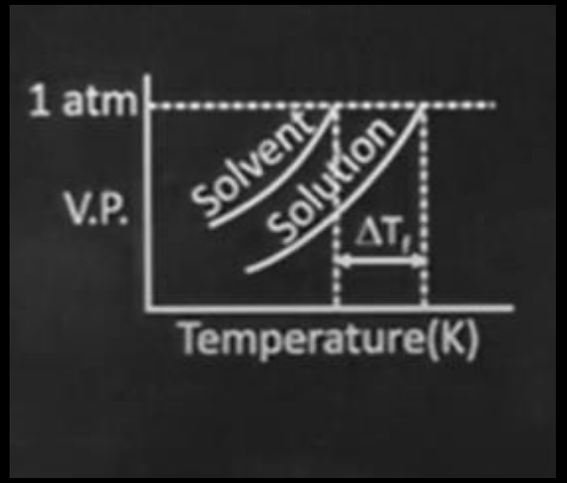
#Q. Consider the following plots of vapour pressure of a solution containing non–volatile solute versus temperature in K and choose the correct graph which represents depression in freezing of solvent.



A



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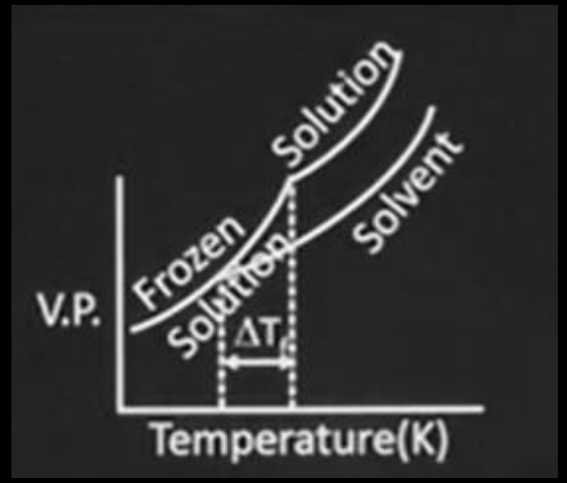

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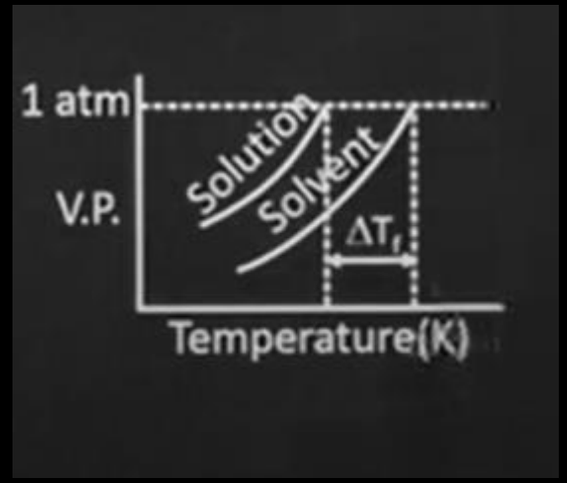

D

Ans. (A)

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#Q. Select the incorrect statements about the modern periodic table.

(A) Physical and chemical properties of elements are based on their atomic weight

(B) Physical and chemical properties of elements are based on their atomic number

(C) Non–metallic elements are lesser in number than metallic elements

(D) In periodic table, 18 groups are present

Ans. (A)

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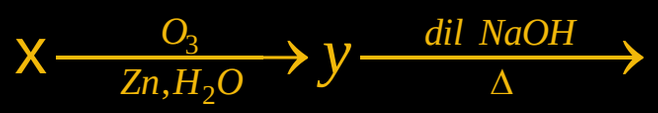
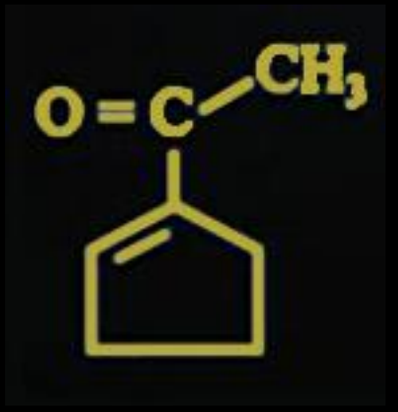
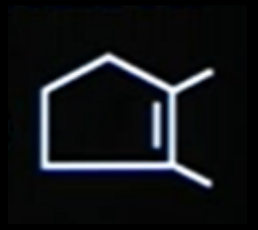
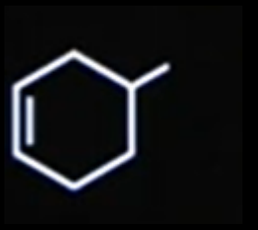
#Q.

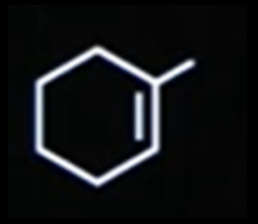


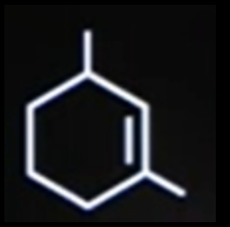


x would be:

A 

B 

C 

D 

Ans. (C)