PAPER SOLUTION

From Meerut

JEE MAIN

2025

JAN	SHIFT
23	2nd

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JEE MAIN 2025 LIVE PAPER DISCUSSION

#Q. The correct order of melting point of 14 group element is (K).

(A) C > Si > Ge > Sn > Pb

(B) Si > C > Ge > Sn > Pb

(C) Ge > Sn > C > Si > Pb

(D) C > Si > Ge > Pb > Sn

Ans. (D)

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#Q. What will be effect on pH of water when it is heated:

A Increase

B Decrease

C Remains same

D pH first increases then decreases

Ans. (B)

#Q. α–helix protein and β–pleated sheet protein belong from which of the following structures?

A Primary

B Secondary

C Tertiary

D Quarternary

Ans. (B)

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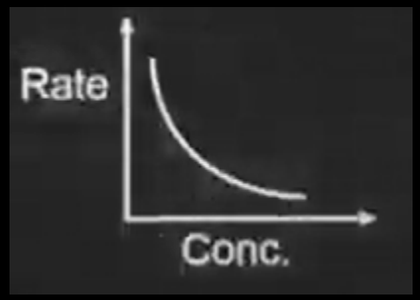
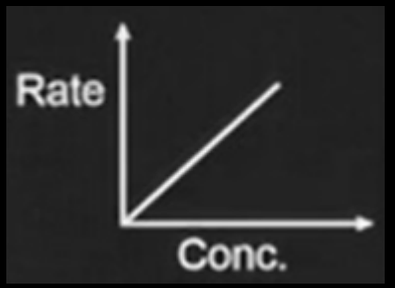
#Q. Which one of the following plots represents zero order reaction?

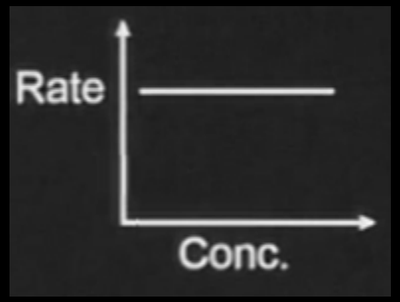
A



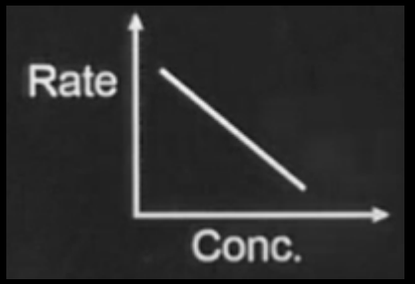
B



C



D



Ans. (C)

#Q. By using relation

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

Which of the following is incorrect for spontaneous reaction at a given temperature.

(NCERT Thermodynamics page no. – 162, class – XI)

A $\Delta H > 0, \Delta S > 0$

B $\Delta H > 0, \Delta S < 0$

C $\Delta H < 0, \Delta S > 0$

D $\Delta H < 0, \Delta S < 0$

Ans. (B)

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#Q. Statement 1 : For a particular shell, maximum number of orbital is n^2.
Statement 2 : For d–subshell, number of orientation lies between –l to +l including zero.

(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. (A)

#Q. Match the following List I with List II:

	List – I (Alloys)		List–II (Metals)
A.	Bronze	1.	Fe, Cr, and Ni
B.	Stainless steel	2.	Cu and Sn
C.	UK Gold Coin	3.	Cu and Zn
D.	Brass	4.	Ag, Cu, Zn and Ni

(A) $A-2, B-1, C-4, D-3$

(B) $A-3, B-4, C-1, D-2$

(C) $A-4, B-3, C-2, D-1$

(D) $A-1, B-2, C-3, D-4$

Ans. (A)

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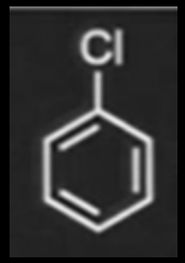
#Q.

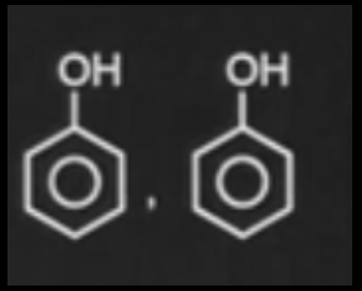


$$\xrightarrow[\text{high T \& P}]{(i)\ NaOH} A \xrightarrow[H_2SO_4]{K_2Cr_2O_7} B$$

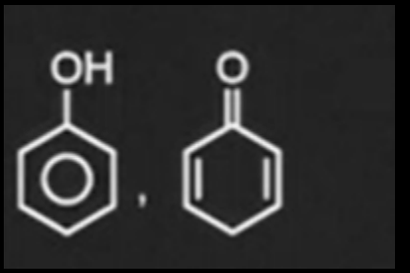
$(ii)\ H^+/H_2O$

Predict A and B?

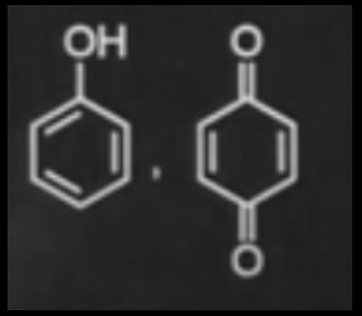
A



B



C



D None of these

Ans. (C)

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#Q. The total number of isomers possible (aldehyde & ketones) for C_4H_8O are:–

A 3

B 4

C 5

D 6

Ans. (A)

#Q. Which of the following complex has d^4 configuration?

A $[Fe(CN)_6]^{3-}$

B $[Co(CN)_6]^{3-}$

C $[MnF_6]^{3-}$

D $[CoCl_4]^{2-}$

Ans. (C)

#Q. Consider the given following reaction:

$$X_2Y(S) \rightleftharpoons X_2(g) + \frac{1}{2}Y_2(g).$$

If α is the degree of dissociation. Calculate K_P in terms of P total pressure.

A $K_P = \dfrac{2P^{3/2}}{3^{3/2}}$

B $K_P = \dfrac{2P^{3/2}}{3}$

C $K_P = \sqrt{\dfrac{2P}{3}}$

D $K_P = \dfrac{\sqrt{2}P}{3}$

Ans. (A)

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#Q. When a non–volatile solute (A) is added to volatile solvent, the vapour pressure of solvent decreases by 10 mm Hg. Mole fraction of solute is 0.2. if 2nd solute (B) is added to the same solution and vapour pressure of solution decreases by 20 mm Hg calculate mole fraction of 2nd solute in the final solution.

A 0.3

B 0.4

C 0.5

D 0.6

Ans. (C)

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#Q. Consider the following E° values of given half cell.

$E^{o}_{Ag^{+}/Ag} = 0.8\ V,\ E^{o}_{Zn^{+}/Zn} = -0.76\ V,$

$E^{o}_{Cu^{2+}/Cu} = 0.34\ V,\ E^{o}_{Mg^{2+}/Mg} = -2.36\ V$

Then which of the following will have the most negative value of ΔG^{o}?

A $Zn \mid Zn^{2+} \parallel Cu^{2+} \mid Cu$

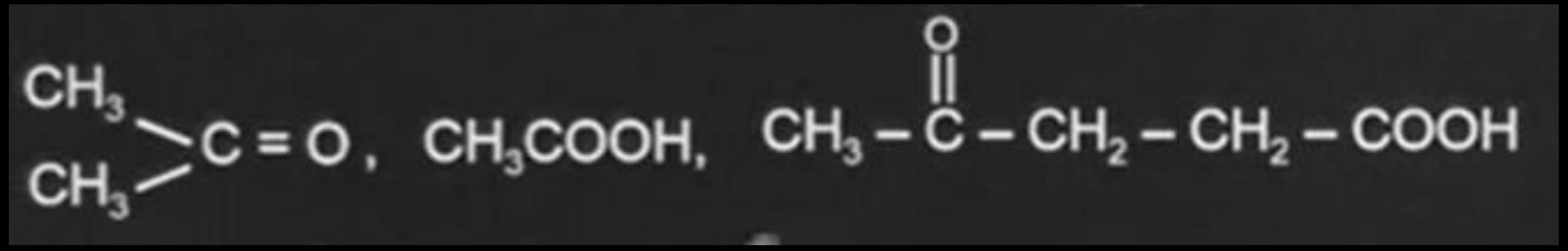
B $Mg \mid Mg^{2+} \parallel Ag^{1+} \mid Ag$

C $Mg \mid Mg^{2+} \parallel Zn^{2+} \mid Zn$

D $Cu \mid Cu^{2+} \parallel Ag^{1+} \mid Ag$

Ans. (B)

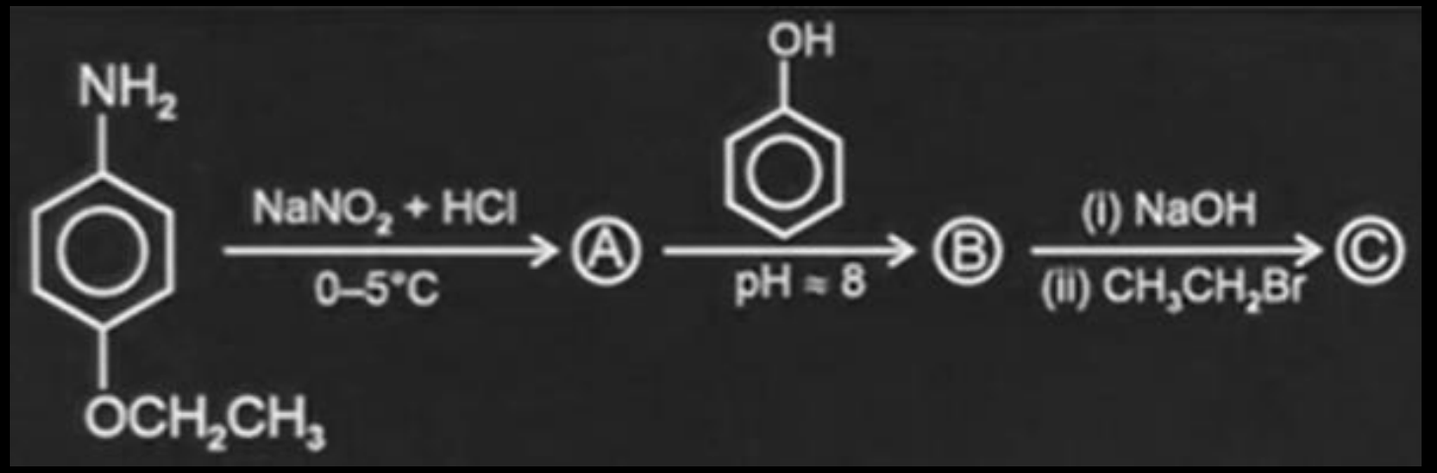
#Q. A compound X consume two moles of H_2 and when 'X' heated with $KMnO_4/H^+$ give



Number of σ bonds in X are _____.

Ans. 27

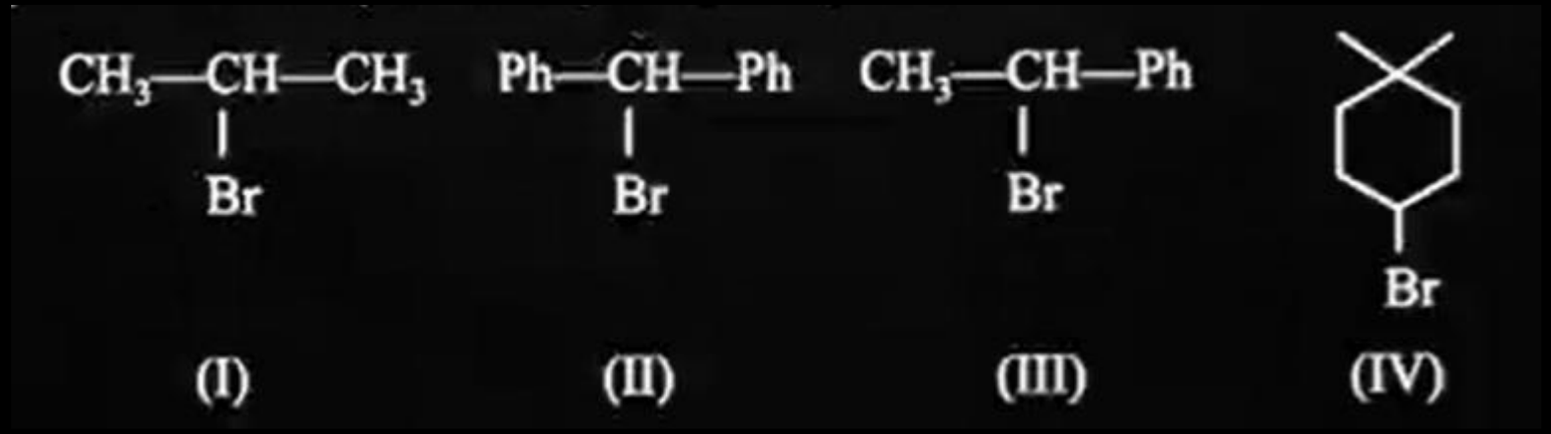
#Q.



Number of sp^3 hybridised carbon atoms in C is:

Ans. 4

#Q. Rate of solvolysis in following compound is:



A. II > IV > III > I

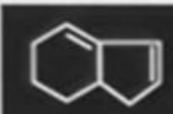
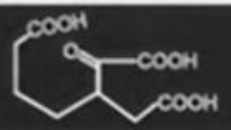
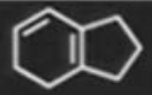
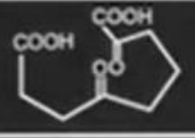
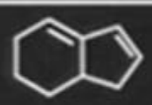
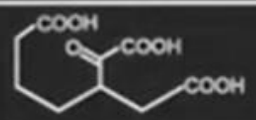
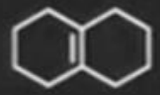
B. III > II > I > IV

C. II > III > IV > I

D. II > III > I > IV

Ans. (D)

#Q. Match the following :

	Reactant		Product
(A)		(i)	
(B)		(ii)	
(C)		(iii)	
(D)		(iv)	

Give correct product of oxidative ozonolysis (O_3/H_2O)

(A) A–ii, B–i, C–iii, D–iv

(B) A–i, B–ii, C–iii, D–iv

(C) A–i, B–ii, C–iv, D–iii

(D) A–i, B–iv, C–ii, D–iii

Ans. (B)

#Q. 0.01 mole of an organic compound gives 1.76 g CO_2 and 0.9 g H_2O on complete combustion. Find out chemical formula of compound.

A C_3H_8

B C_4H_{10}

C C_5H_{12}

D C_5H_{14}

Ans. (B)

#Q. Calculate the amount of Al_2O_3 formed (in g) when 81 g of Al is reacted with 128 g of O_2.

Ans. 153

#Q. Consider a binary solution of two volatile liquid components 1 and 2 . x_1 and y_1 are the mole fraction of component 1 in liquid and vapour phase respectively. The slope and intercept of linear plot of $\frac{1}{x_1}$ vs $\frac{1}{y_1}$ are given as:

A $\frac{P_1^o}{P_2^o}, \frac{P_2^o - P_1^o}{P_2^o}$

B $\frac{P_2^o}{P_1^o}, \frac{P_2^o - P_1^o}{P_2^o}$

C $\frac{P_2^o}{P_1^o}, \frac{P_1^o - P_2^o}{P_2^o}$

D $\frac{P_1^o}{P_2^o}, \frac{P_1^o - P_2^o}{P_2^o}$

Ans. (A)