PAPER SOLUTION

From Meerut

JEE MAIN

2025

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#Q. Density of 3 M NaOH is 1.25 g/ml. Molality of solutions is:

A 2.65

B 2.5

C 2.8

D 3

Ans. (A)

#Q. Arrange according to CFSE.

(i) $[Co(NH_3)_4]^{2+}$ (ii) $[Co(NH_3)_6]^{3+}$ (iii) $[Co(NH_3)_6]^{2+}$ (iv) $[Co(en)_3]^{3+}$

A (iv) > (ii) > (iii) > (i)

B (iv) > (iii) > (ii) > (i)

C (i) > (iii) > (ii) > (iv)

D (i) > (ii) > (iii) > (iv)

Ans. (A)

#Q. Which of the following anion will not undergoes disproportionation?

(NCERT PAGE No – 244 Ex. No. – 7.5)

A ClO_4^-

B ClO_3^-

C ClO_2^-

D ClO^-

Ans. (A)

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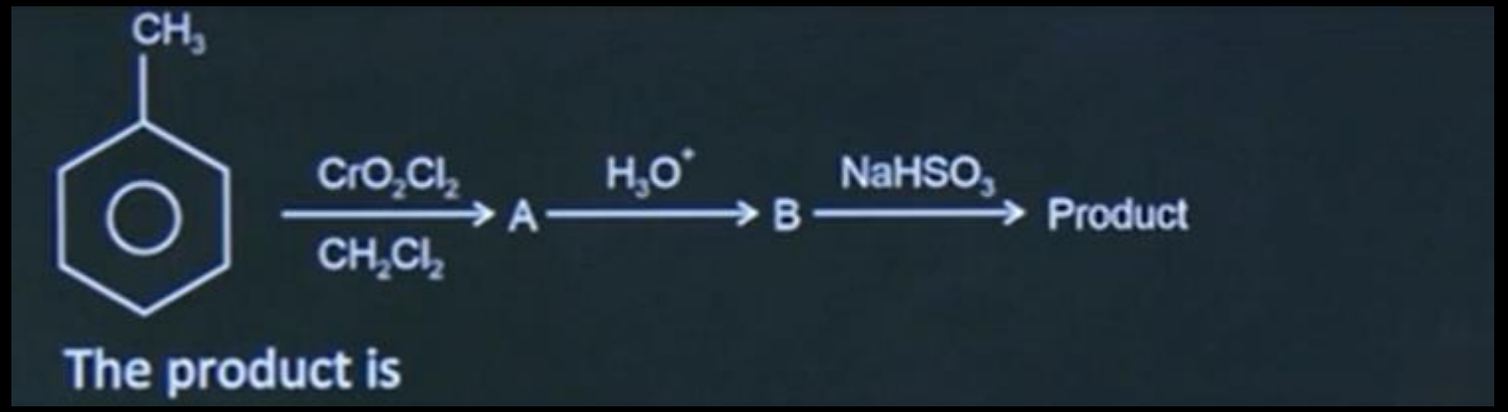
#Q.



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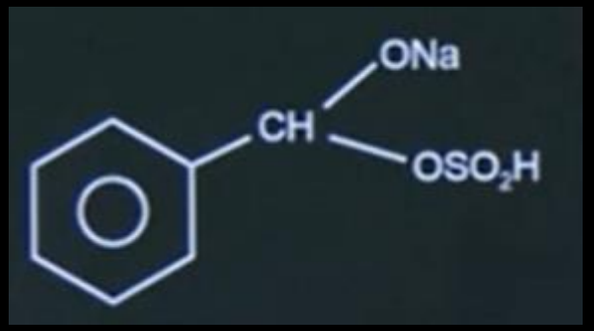
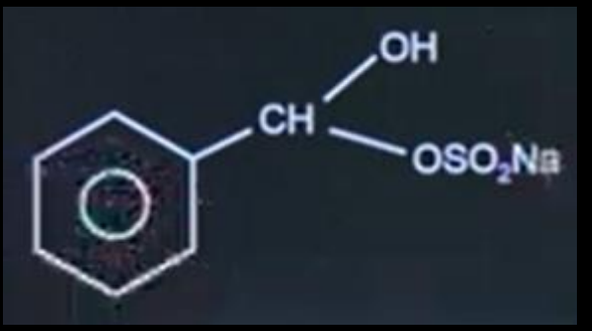
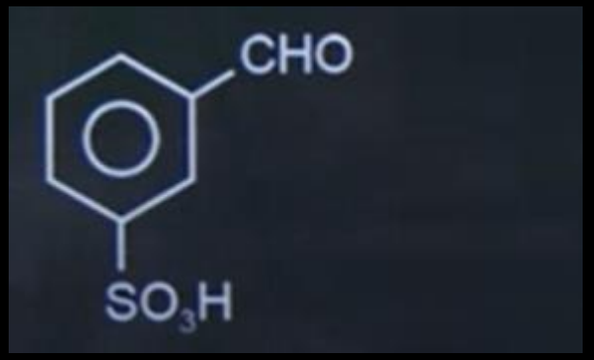
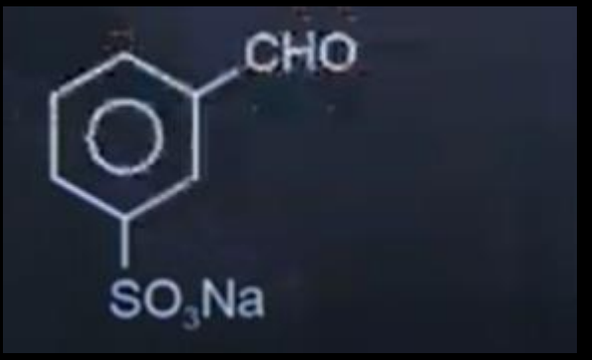
A 

B 

C 

D 

Ans. (B)

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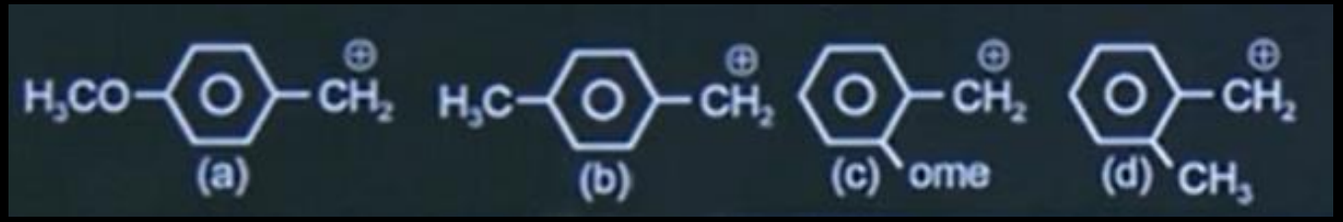
#Q. What is correct order of stability of carbocation.



A a > b > c > d

B c > a > d > b

C a > c > d > b

D c > b > a > d

Ans. (C)

#Q. 200 mL of 0.2 M solution of NaOH is mixed with 400 mL of 0.5 M NaOH solution. Molarity of mixture is:

A 0.4

B 0.6

C 4 M

D 0.8 M

Ans. (A)

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#Q. Given are two statements:

Statements I: Lassaigne test is used for detection of Nitrogen, phosphorous, sulphur and Halogens.

Statements : Lassaigne extract is made with magnesium metal.

(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. Which one has two secondary Hydrogen atoms?

A. 2, 2, 4, 4–tetramethylheptane

B. 2, 2, 3, 4–tetramethylheptane

C. 2, 2, 3, 3–tetramethyloctane

D. 3–ethyl–2, 4–dimethylpentane

Ans. (D)

#Q. Compare dipole moment of:
(i) NF_3 (ii) $CHCl_3$ (iii) H_2S (iv) HBr

A. i > ii > iii > iv

B. ii > iii > i > iv

C. ii > iii > iv > i

D. iii > i > iv > ii

Ans. (C)

#Q. $Ni^{2+} + 2DMG \longrightarrow Complex$

Nickel di methyl glyoxime complex has how many Hydrogen bonds?

Ans. 2

#Q. In Ru and Nb, if in Ru, 4d electrons are x and in Nb, 4d electrons are y then find the sum of x and y.

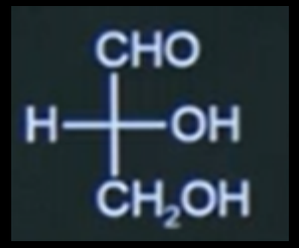
Ans. 11

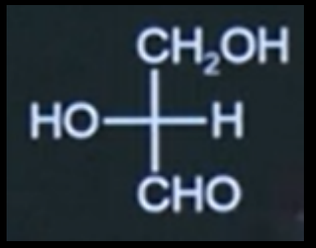
#Q. $R-Br + Mg \xrightarrow{\text{dry ether}} A \xrightarrow{H_2O}$ Isopentane

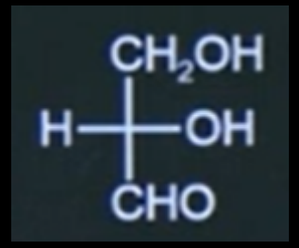
How many R–Br can form isopentane?

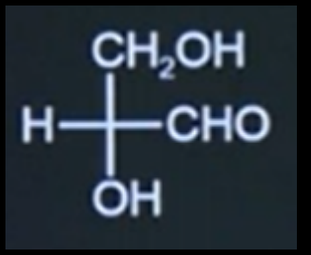
Ans. 4

#Q. Correct structure of L–Glyceraldehyde is:

A 

B 

C 

D 

Ans. (C)

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#Q. Identify the extensive and intensive property?

A. Mass, volume, conductivity – Intensive property

B. Mass, temperature, heat, volume – Extensive property

C. Mass, volume, Internal energy – Extensive property

D. Density, temperature, moles, Internal energy – Intensive property

Ans. (C)

#Q. Among Group – 15 elements, what is the maximum covalency of an element having weakest E–E bond (E = element).

A 4

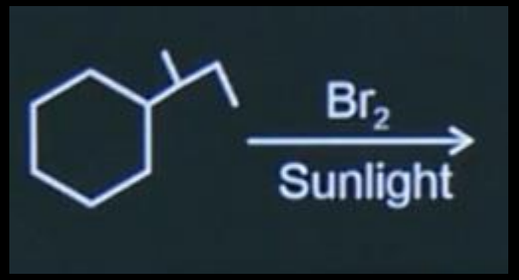
B 5

C 3

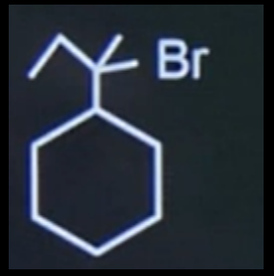
D 2

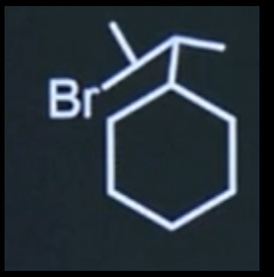
Ans. (B)

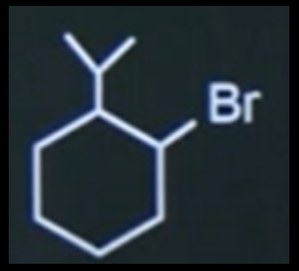
#Q. Secondary butyl cyclohexanol when reacts with Br_2 in presence of sunlight produce

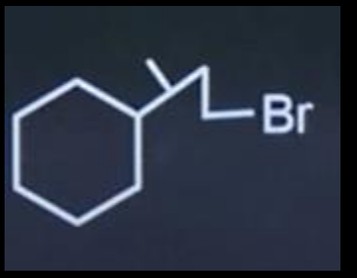


Major Product?

A 

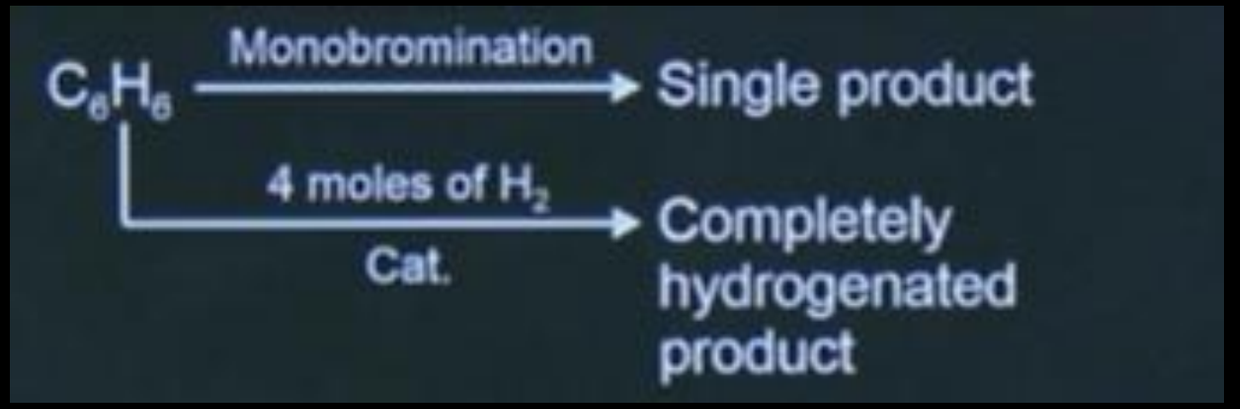
B 

C 

D 

Ans. (A)

#Q.



Find the number of $\pi - electrons\ in\ C_6H_6$.

Ans. 4

#Q. What is the relation between K_{sp} and S of $Zr_3(PO_4)_4$.
(NCERT Equilibrium page no. – 204 part – 1)

A $S = \left(\frac{K_{sp}}{6912}\right)^{\frac{1}{7}}$

B $S = \left(\frac{K_{sp}}{144}\right)^{\frac{1}{7}}$

C $S = \frac{K_{sp}}{6912}$

D None

Ans. (A)

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#Q. Consider the following statements 1 and statements 2 and choose the correct option.

Statements I: During corrosion pure metal acts as anode and impure metal acts as cathode.

Statements : Rate of corrosion is more in alkaline medium than in acidic medium.

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. (B)

#Q. Match the column and choose the correct option.

(A)	$\left(\frac{\partial H}{\partial T}\right)_P$	(P)	C_P
(B)	$\left(\frac{\partial G}{\partial P}\right)_T$	(Q)	C_V
(C)	$\left(\frac{\partial U}{\partial T}\right)_V$	(R)	$-S$
(D)	$\left(\frac{\partial G}{\partial T}\right)_P$	(S)	V

A. A – P, B – S, C – Q, D – R

B. A – P, B – S, C – R, D – Q

C. A – P, B – R, C – Q, D – S

D. A – Q, B – S, C – P, D – R

Ans. (A)

#Q. How many of the following homoleptic complexes are low spin.

$[CoF_6]^{3-}$, $[Fe(CN)_5(NO)]^{2-}$, $[Co(NH_3)_6]^{3+}$,$[Co(H_2O)_6]^{3+}$

A 1

B 2

C 3

D 4

Ans. (B)

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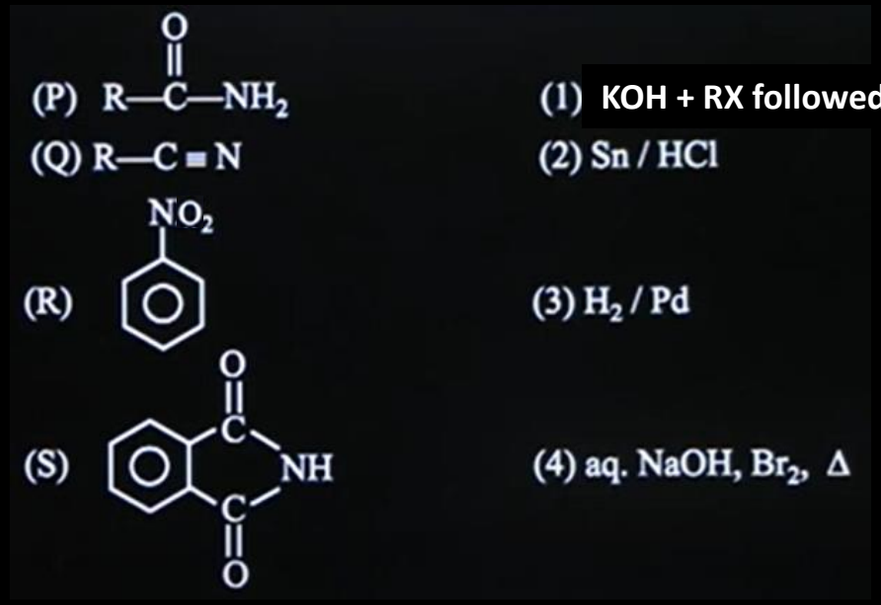
#Q. Which of the following converts into amine.



Which of the following is correctly matched:

A P – 1, Q – 3, R – 2, S – 4

B P – 3, Q – 1, R – 4, S – 2

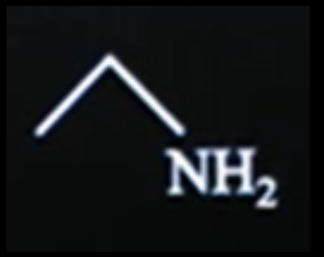
C P – 1, Q – 2, R – 3, S – 4

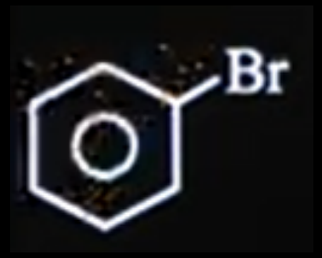
D P – 4, Q – 3, R – 2, S – 1

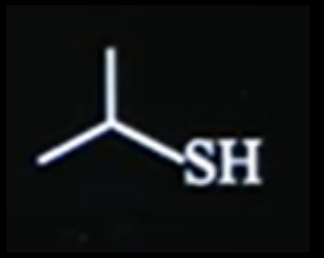
Ans. (D)

#Q. Which one gives prussian blue colour with Lassaigne's test:

(A) $NH_2 - NH_2$

(B) 

(C) 

(D) 

Ans. (B)