Resonance®
Educating for better tomorrow

JEE (MAIN) 2026

MEMORY BASED QUESTIONS & TEXT SOLUTION

SHIFT-1

DATE & DAY: 22nd January 2026 & Thursday

PAPER-1

Duration: 3 Hrs.
Time: 09:00 – 12:00 IST

SUBJECT: CHEMISTRY

REGISTERED & CORPORATE OFFICE (CIN: U80302RJ2007PLC024029):
CG Tower, A-46 & 52, IPIA, Near City Mall, Jhalawar Road, Kota (Rajasthan) - 324005
0744-2777777 | 73400 10345 | contact@resonance.ac.in | www.resonance.ac.in | Follow Us: @ResonanceEdu | @Resonance_Edu

PART : CHEMISTRY

1. Arrange the following metal ions forming octahedral complexes with low spin in increasing order of unpaired electrons

Mn^{3+}, Cr^{3+}, Fe^{3+}, Co^{3+}

(1) $Co^{3+} < Fe^{3+} < Mn^{3+} < Cr^{3+}$ (2) $Co^{3+} < Mn^{3+} < Fe^{3+} < Cr^{3+}$

(3) $Cr^{3+} < Mn^{3+} < Co^{3+} < Fe^{3+}$ (4) $Co^{3+} < Mn^{3+} < Cr^{3+} < Fe^{3+}$

Ans. (1)

2. Match the following and choose the correct option.

	List-I		List-II
(a)	$[Ag(NH_3)_2]^+$	(i)	Fehling's solution
(b)	Zn-Hg/HCl	(ii)	Clemmenson's reduction
(c)	NH_2-NH_2/KOH	(iii)	Tollen's reagent
(d)	Cu^{2+}/OH^-	(iv)	Wolff-Kishner reduction

(1) a(i), b(ii), c(iii), d(iv) (2) a(iv), b(iii), c(ii), d(i) (3) a(iii), b(ii), c(iv), d(i) (4) a(i), b(ii), c(iv), d(iii)

Ans. (3)

3. **Statement-I:** Sucrose is dextrorotary and upon hydrolysis it becomes laevorotatory.

Statement-II: Sucrose on hydrolysis gives glucose and fructose such that the laevorotation of glucose is more than dextrorotation of fructose.

(1) Both Statement-I and Statement-II are correct.

(2) Both Statement-I and Statement-II are incorrect.

(3) Statement-I is correct, Statement-II is incorrect.

(4) Statement-II is correct, Statement-I is incorrect.

Ans. (3)

4. Which of the following is the correct order of the reactivity of given nucleophiles when treated with CH_3Br in methanol?

F^-, I^-, $C_2H_5O^-$, $C_6H_5O^-$

(1) $F^- > C_2H_5O^- > C_6H_5O^- > I^-$ (2) $I^- > F^- > C_2H_5O^- > C_6H_5O^-$

(3) $I^- > C_2H_5O^- > C_6H_5O^- > F^-$ (4) $C_6H_5O^- > F^- > I^- > C_2H_5O^-$

Ans. (3)

5. Given below are two statements.

Statement I: HX bond length is higher in HCl than HF.

Statement II: The lowest boiling point in hydride of group 15 element is having covalency 4.

(1) Both statement I and statement II is correct

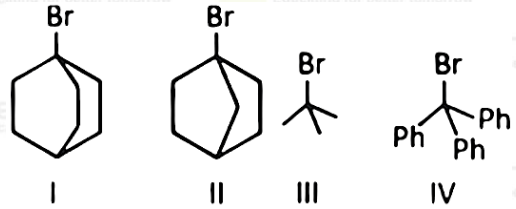
(2) Both statement I and statement II is incorrect

(3) Statement I is correct but statement II is incorrect

(4) Statement I is incorrect but statement II is correct

Ans. (3)

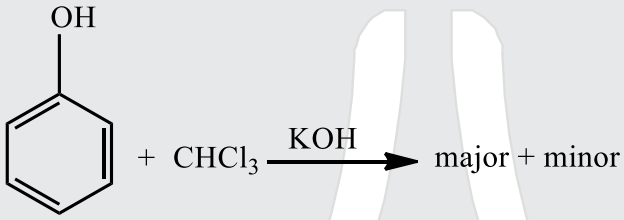
6. Reactivity of following on the basis of S_N1 mechanism.



(1) IV > III > I > II (2) II > IV > II > I (3) III > IV > I > II (4) IV > III > II > I

Ans. (1)

7. **Statement I:**



Major product is ortho substituted and para substituted product is minor

Statement II: Ortho and para can be separated by steam distillation

(1) Both statement I and statement II is correct

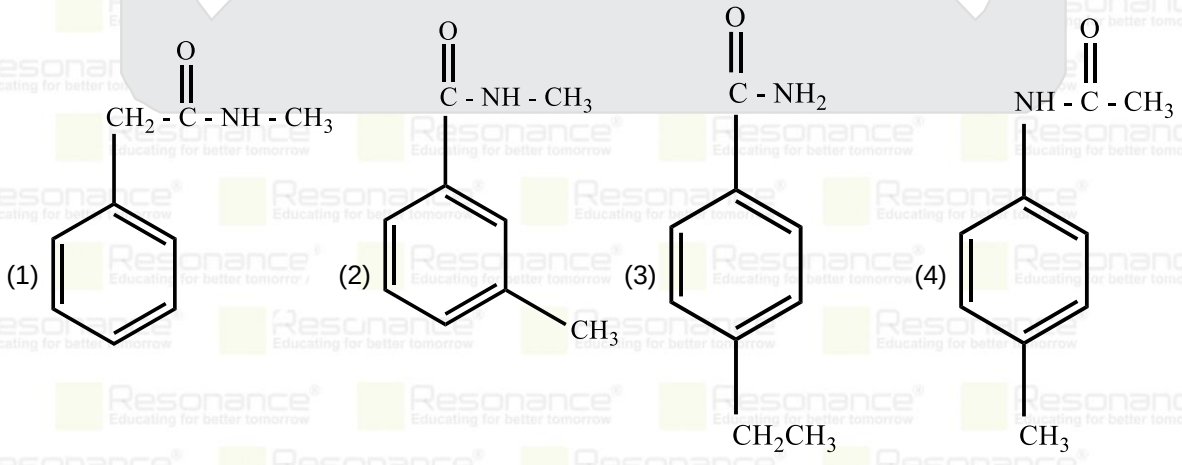
(2) Both statement I and statement II is incorrect

(3) Statement I is correct but statement II is incorrect

(4) Statement I is incorrect but statement II is correct

Ans. (1)

8. A compound 'A' with molecular formula $C_9H_{11}NO$ reacts with Br_2/NaOH to give (X). (X) on reaction with $NaNO_2$ in dil. HCl gives compounds (Y). When (Y) is treated with CuCN, followed by hydrolysis gives (Z). The compound (A) on hydrolysis also gives compound (Z). Identify compound (A)



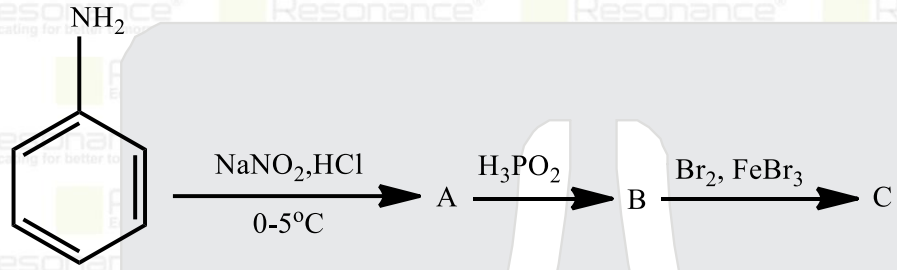
Ans. (3)

9. Which of the following statement is correct regarding the nature and directive influence of $-NO_2$ group in nitration of benzene.

(1) It is an activating group and ortho/para director
(2) It is a deactivating group and ortho/para director
(3) It is a deactivating group and meta director
(4) It is an activating group and meta director

Ans. (3)

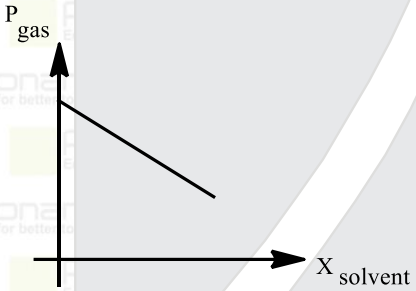
10. Consider the following sequence of reaction and identify A, B and C respectively.

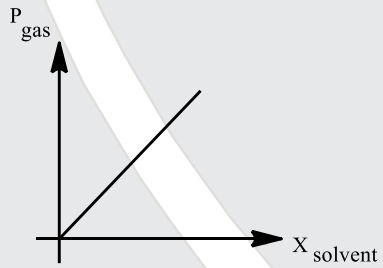


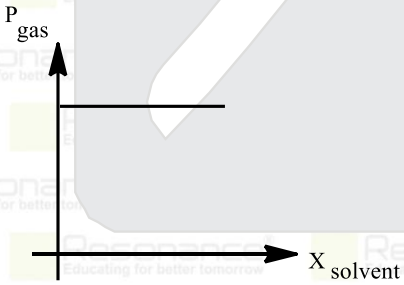
(1) C_6H_5OH, C_6H_6, $C_6H_4Br_2$
(2) $C_6H_5N_2^+Cl^-$, C_6H_6, C_6H_5Br
(3) $C_6H_5NO_2$, C_6H_5OH, C_6H_5Br
(4) C_6H_5Cl, C_6H_5OH, C_6H_6

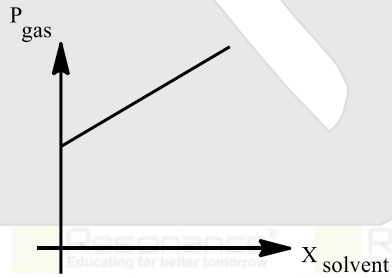
Ans. (2)

11. Which of the following graph (s) is / are correct

(1)


(2)


(3)


(4)


Ans. (1)

12. Given below are two statements

Statement-I : K_H is constant with change in concentration of gas till solution is dilute at given temperature.
Statement-II : According to Henry's Law, partial pressure of gas in vapour phase is inversely proportional to mole fraction of gas in solution.

(1) Both Statement-I and Statement-II are correct (2) Both Statement-I and Statement-II are incorrect
(3) Statement-I is correct, Statement-II is incorrect (4) Statement-I is incorrect and Statement-II is correct

Ans. (2)

13. Consider a first order reaction:

A $\rightarrow$ products

3 different solutions are taken rate of reaction

Solution 1: 100 mL 10 M 'A' $-r_1$

Solution 2 : 200 mL 10 M 'A' $-r_2$

Solution 3: 100 mL 10 M A + 100 mL water $-r_3$

The correct order of the rates of reactions is

(1) $r_1 = r_2 = r_3$ (2) $r_1 = r_2 < r_3$ (3) $r_1 = r_2 > r_3$ (4) $r_1 < r_2 = r_3$

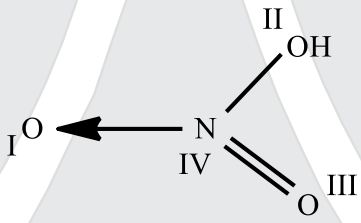
Ans. (3)

14. Bohr's radius of H-atom is 2.12×10^{-10} m. Calculate the energy at this level.

(1) -5.44×10^{-19} J (2) -2.176×10^{-18} J (3) -54.4×10^{-19} J (4) -2.3×10^{-19} J

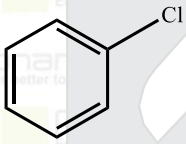
Ans. (1)

15. Find the formal charge of $\overset{IV}{N}$ and $\overset{I}{O}\ \overset{II}{O}\ \overset{III}{O}$



(1) 0, +1, –1, +2 (2) +1, –1, –1, 0 (3) –1, 0, +2, +1 (4) +1, –1, 0, –1

Ans. (3)

16. For 

, the incorrect statement is, ' P '

(1) 'P' is less reactive than benzyl chloride towards nucleophilic substitution reaction.

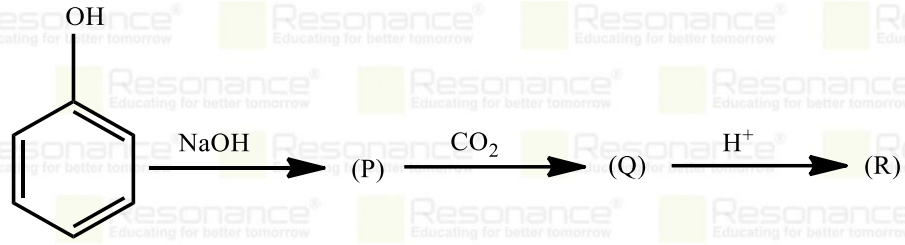
(2) In 'P' C–Cl bond has partial double bond character

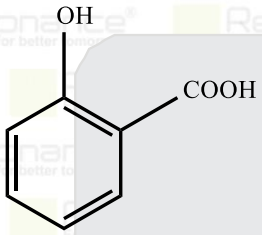
(3) 'Cl' is an ortho-para directing group towards electrophilic aromatic substitution

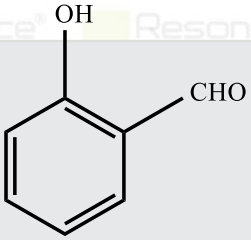
(4) 'P' can undergo nucleophilic substitution reaction at normal conditions

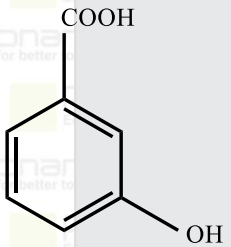
Ans. (4)

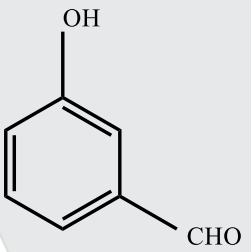
17. In the following reaction sequence, identify compound (R).



(1)


(2)


(3)


(4)


Ans. (1)

18. Which of the following statement is correct regarding element having atomic number 79.

(1) It's first ionisation enthalpy is maximum in its group

(2) It's first ionisation enthalpy is minimum in its group

(3) It belongs to group 10 of periodic table

(4) It belongs to 5th period of periodic table

Ans. (1)

19. Sodium extract of organic compound of 0.1 g is treated with chlorin water and CCl_4 which dissolves in organic solvent produce a violet colour upon treatment with $AgNO_3$ a yellow ppt of 0.12 g is produce. Calculate the percentage of Halide in organic compound.

Ans. (65)

20. For the reaction given below at 25ºC

$A_2 \rightleftharpoons 2A$

Find $\ln K_p$

Given $\left(\Delta G^\circ_f\right)_A = -\frac{50.384\text{KJ}}{\text{mol}}$

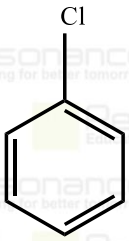
Given $\left(\Delta G^\circ_f\right)_{A_2} = -100\text{KJ/mol}$

(1) 0.43 (2) 0.23 (3) 0.31 (4) 0.53

Ans. (3)

21.

(P)



(Q)

Read the following statements

(1) Q has more δ on chlorine than P

(2) Q has more dipole moment than P

(3) In Q, C-Cl bond has more double bond character

(4) In Q, Cl is attached to sp^2 Hybridised carbon and in P it is attached to sp^3

(5) In Q C-Cl bond length is more due to repulsion between lone pair on chlorine and π e^- in aromatic ring

Number of correct statements are?

Ans. (2)

22. 1 mole of cyclohexene reacts with one mole of Br_2 form product 'Y', the product 'Y' has 'C' and 'Br' atom in the ratio as 3 : 1, then find the % of Bromine in product 'Y'.

Ans. (66)