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JEE (MAIN) 2026

MEMORY BASED QUESTIONS & TEXT SOLUTION

SHIFT-1

DATE & DAY: 24 January 2026 & Saturday

PAPER-1

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

SUBJECT: CHEMISTRY

REGISTERED & CORPORATE OFFICE (CIN: U80302RJ2007PLC024029):
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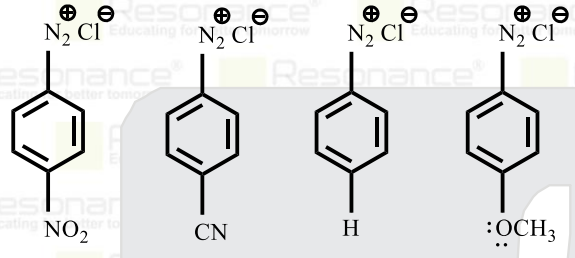
PART : CHEMISTRY

Atomic masses : [H = 1, D = 2, Li = 7, C = 12, N = 14, O = 16, F = 19, Na = 23, Mg = 24, Al = 27, Si = 28, P = 31, S = 32, Cl = 35.5,K = 39, Ca = 40, Cr = 52,Mn = 55, Fe = 56, Cu = 63.5,Zn = 65, As = 75, Br = 80, Ag = 108, I = 127,Ba = 137, Hg = 200, Pb = 207]

1. Compare order of stability :



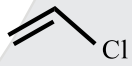
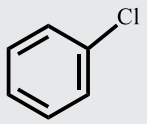
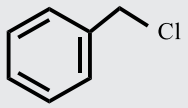
(A) (B) (C) (D)

(1) A < B < C < D (2) B < A < C < D

(3) C < D < A < B (4) D < A < B < C

Ans. (1)

2. Match List-I with List-II.

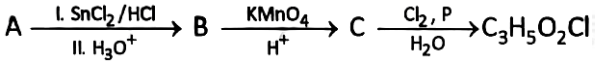
	List-I		List-II
A.	Vinyl halide	(I)	
B.	Allyl halide	(II)	
C.	Benzyl halide	(III)	
D.	Aryl halide	(IV)	

Select the correct option.

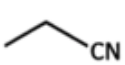
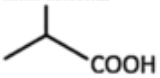
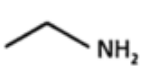
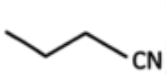
(1) A(II), B(I), C(III), D(IV) (2) A(I), B(II), C(III), D(IV)

(3) A(I), B(II), C(IV), D(III) (4) A(II), B(I), C(IV), D(III)

Ans. (2)

3. 

Final product has one chiral centre. Structure of A is

(1)  (2)  (3)  (4) 

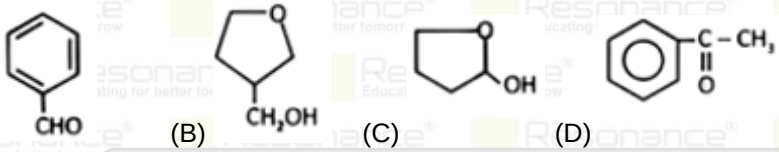
Ans. (1)

4. Which of following compound contains 3 unpaired electrons?

(1) V_2O_5 (2) $[TiF_6]^{3-}$ (3) $[CoF_6]^{4-}$ (4) $[Fe(CN)_6]^{3-}$

Ans. (3)

5. Which of the following compounds with give positive Tollen's reagent test?



(A) (B) (C) (D)

(1) A, B and C only (2) A and C only

(3) A, C and D only (4) B, C and D only

Ans. (2)

6. Two solutes A and B of 0.3 g and 0.9 g respectively (molar mass of A and B are $30\ g/mol$ and $90\ g/mol$ respectively. Calculate of osmotic pressure at 300 K (in atm) in 100 ml of solution

Ans. (5)

7. $K_2Cr_2O_7 + I^- + H^+ \rightarrow I_2$ (x = number of moles of e^-exchanged per mol I_2) $K_2Cr_2O_7 + S^{2-} \rightarrow S(y =$ number of moles of e^-exchanged for mole of S$)x + y$ is

(1) 12 (2) 9 (3) 4 (4) 6

Ans. (3)

8. Match the column

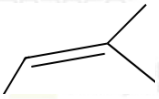
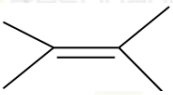
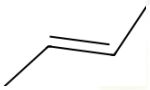
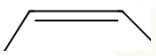
	Column-I		Column-II
(A)	IF_3	(I)	$sp^3\ d^3$, Pentagonal bipyramidal
(B)	IF_5	(II)	$sp^3\ d^3$, T-shaped
(C)	IF_7	(III)	sp^3, Tetrahedral
(D)	ClO_4^-	(IV)	$sp^3\ d^2$, Square pyramidal

(1) (A)-(I); (B)-(II); (C)-(III); (D)-(IV) (2) (A)-(II); (B)-(I); (C)-(IV); (D)-(III)

(3) (A)-(II); (B)-(IV); (C)-(I); (D)-(III) (4) (A)-(II); (B)-(III); (C)-(IV); (D)-(I)

Ans. (3)

9. Consider the following alkene

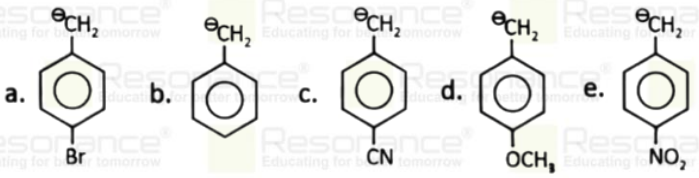
(I)  (II)  (III)  (IV) 

The correct stability order of alkenes is

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

Ans. (1)

10. The correct order of stability of following species is

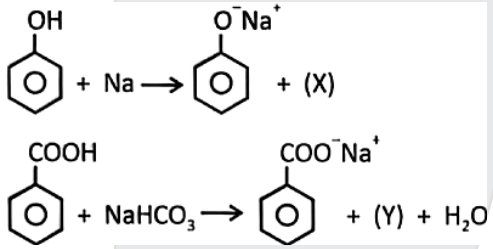


(1) $e > c > a > b > d$ (2) $d > c > b > a > e$

(3) $e > a > c > b > d$ (4) $e > a > b > c > d$

Ans. (1)

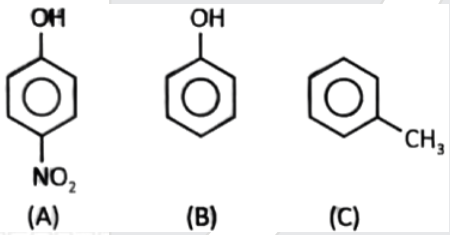
11. What is the sum of molar mass of X and Y formed in the given reactions?



(1) 46 (2) 44 (3) 2 (4) 42

Ans. (1)

12. Consider the following molecules.



The correct order of dipole moment is

(1) A > B > C (2) A > C > B (3) B > A > C (4) C > A > B

Ans. (1)

13. Given below are two statements.

Statement I: Atomic radius is always more than ionic radius.

Statement II: The correct order of metallic character is K > Mg > Al > B

In the light of above statements, choose the correct option.

(1) Both statement I and statement II are correct

(2) Both statement I and statement II are incorrect

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

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

Ans. (4)

14. Match the following.

	Column-I		Column-II
A.	Free expansion	(I)	$W = -P_{ex}\,\Delta V$
B.	Reversible isothermal	(II)	$W = nC_v dT$
C.	Irreversible isothermal	(III)	$W = 0$
D.	Adiabatic reversible	(IV)	$W = -nRT\ln\frac{V_f}{V_i}$

(1) A(I), B(IV), C(III), D(II) (2) $A(III), B(IV), C(I), D(II)$
(3) $A(IV), B(III), C(II), D(I)$ (4) $A(II), B(I), C(III), D(IV)$

Ans. (2)

15. Non-volatile solute A of mass 0.3 g (Molecular mass $= 60$), and non-volatile solute B of mass 0.9 g (Molecular mass $= 180$) in $100\ mL H_2O$ at $27°C$. If $K_b = 0.52\ K \cdot Kg° \cdot mol^{-1}$, then elevation of boiling point is

(1) $0.52\ K$ (2) $0.052\ K$ (3) $0.026\ K$ (4) $0.083\ K$

Ans. (1)

16. A solution contains two group-IV cations, X^{2+} and Y^{2+}, each at an initial concentration of $0.1M$. H_2S gas is passed through the solution to form a saturated solution.
Given K_{sp} of $YS = 2 \times 10^{-27} M^2$ K_{sp} of $XS = 1 \times 10^{-27} M^2$
What is the minimum concentration of sulphide in [S^{2-}] required to begin precipitation of YS?

(1) 2×10^{-26} (2) 10^{-26} (3) 3.2×10^{-14} (4) 0.1

Ans. (1)

17. What is the hybridisation and spin only magnetic moment of complex $[Co(CO)_6]Cl_3$?

(1) $d^2sp^3, 0BM$ (2) $sp^3d^2, 4.90BM$ (3) $d^2sp^3, 4.90BM$ (4) $sp^3d^2, 0$ BM

Ans. (1)

18. Minimum energy transition of Balmer series (energy line having minimum energy) of H -atom has energy of L eV. If the value of minimum energy of Lymen series (energy line having minimum energy) of H -atom in terms of L is y, then the value of 10 y is ___ .

Ans. (54)

19. Find % of ' N ' in 0.5 g organic compound which gives $34\ mL\ N_2(g)$ at 715 mm Hg pressure and 300 K Aq. tension $= 15\ mmHg$

(Report to nearest integer) $R = 0.0821\ \frac{Lit-atm}{K-mol}$

Ans. (7)

20. Find the value of $\log\left(\frac{K_{catalyst}}{K_{uncatalyst}}\right)$ at $300K$. If the change in activation energy (Δ) is $-10\ kJ/mol$.

($R = 8\ JK^{-1}\ mol^{-1}$) ($\ln x = 2.31 \log x$)

Ans. (2)