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JEE (MAIN) 2026

MEMORY BASED QUESTIONS & TEXT SOLUTION

SHIFT-1

DATE & DAY: 21st January 2026 & Wednesday

PAPER-1

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

SUBJECT: CHEMISTRY

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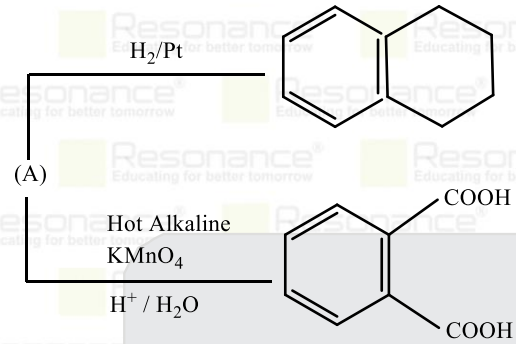
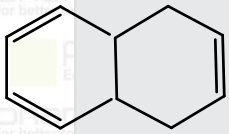
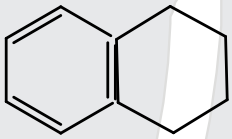
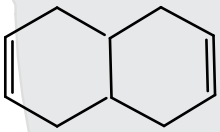
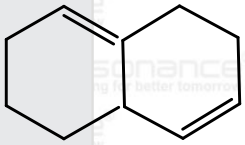
PART : CHEMISTRY

1.



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

Ans. (1)

2. For two chemical reactions A and B , if the difference between their activation energy is 20 kJ at 300 $K\left(R = 8.3\ J\ K^{-1}\ mol^{-1}\right)$. Determine $\ln\frac{k_2}{k_1}$.

Ans. (8)

3. In 'S' estimation 0.7 g of an organic compound gives 1 g $BaSO_4$ in Carius method. What is the % of ' S ' in compound? ___

(1) 19.61 (2) 23.85 (3) 27.93 (4) 14.57

Ans. (1)

4. Which of the following is the correct order with respect to the property indicated?

(1) Cl > F (Ionisation energy) (2) $K_2O > Na_2O > Al_2O_3$ (Basic nature)

(3) $K > Na > Al > Mg$ (Metallic character) (4) None of these

Ans. (2)

5. Given below are two statements.

Statement 1: Arginine and Tryptophan are essential amino acids.

Statement II: Glycine does not have any chiral carbon.

In the light of the above statements, which is 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 and statement-II is incorrect

(4) Statement-I is incorrect and statement-II is correct

Ans. (1)

6. 14.0 g of calcium metal is allowed to react with excess HCl at 1.0 atm pressure & 273 K . Which of the following statement is incorrect? (Molar Mass in $gmol^{-1} Ca = 40, Cl = 35.5$)

(1) 0.35 mol of H_2 gas is evolved. (2) The limiting reagent is calcium metal.

(3) 33.3 g of $CaCl_2$ is produced. (4) 7.84 L° of H_2 gas is evolved.

Ans. (3)

7. In the following reaction,

$$MnO_4^{2-} \xrightarrow{H^+}$$

Manganate ion undergoes ion undergoes disproportionation to form

(1) MnO_2, MnO_4^- (2) MnO, MnO_2 (3) MnO_2, MnO (4) $4\ MnO_4^-, MnO$

Ans. (1)

8. Given below are two statements:

Statement I: All the pairs of molecules $(PbO, PbO_2); (SnO, SnO_2)$ and (GeO, GeO_2) contain amphoteric oxides.

Statement II: $AlCl_3, BH_3, BeH_2$ and NO_2 all have incomplete octet.

In the light of the 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) Both Statement I is correct but Statement II is incorrect

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

Ans. (2)

9. 80 mL of organic compound is mixed with 264 mLO_2 and ignited. It gives 224 mL of gaseous mixture at NTP. After passing KOH 64 mL of gas remains. The organic compound is

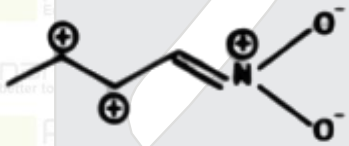
(1) C_2H_4 (2) C_2H_2 (3) C_4H_{10} (4) C_3H_6

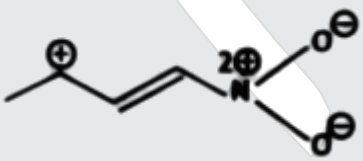
Ans. (2)

10. Which of the following resonating structures is the most stable?

(1) 

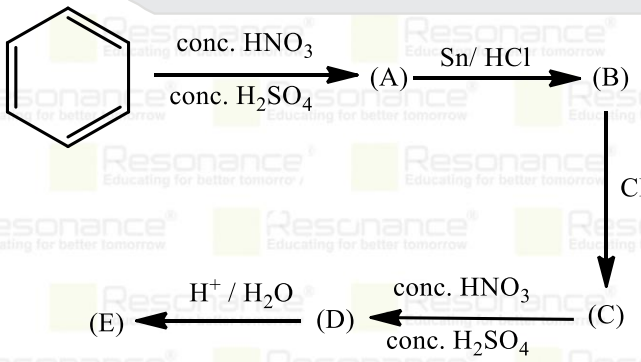
(2) 

(3) 

(4) 

Ans. (1)

11.



% of nitrogen in the final product is…?

Ans. (20)

12. Out of the following, how many compounds have tetrahedral geometry?

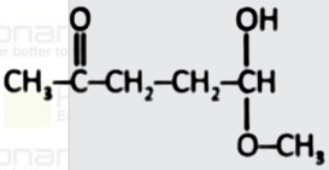
$NH_4^+, XeF_4, [NiCl_4]^{2-}, [PtCl_4]^{2-}, [Cu(NH_3)_4]^{2+}, BF_3$ and $[Ni(CO)_4]$

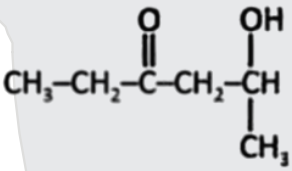
Ans. (3)

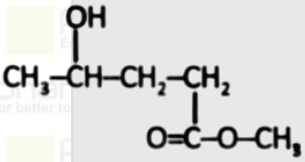
13. 1 g of AB_2 is dissolved in 50 g solvent such that $\Delta T_f = 0.689$. When 1 g AB is dissolved in 50 g of same solvent, ΔT_f is 1.176. Find molar mass of $AB_2 \cdot K_f = 5\ K\ kg/mol$.
(Report to nearest integer) (AB_2) and AB are non electrolyte.

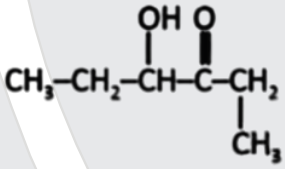
Ans. (145)

14. $C_6H_{12}O_3$ gives positive iodoform test on hydrolysis with dil. acid product formed gives Tollen and iodoform test both. Find structure of $C_6H_{12}O_3$.

(1) 

(2) 

(3) 

(4) 

Ans. (1)

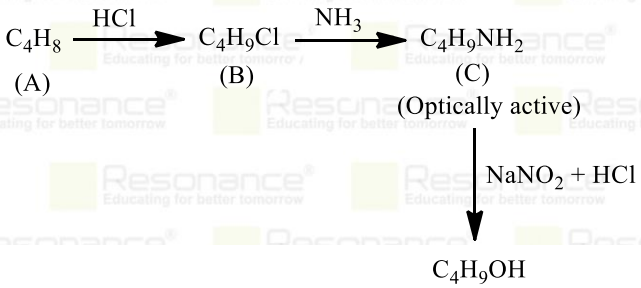
15. Consider the following statements.
(A) Propanal and Propanone are functional isomers
(B) Ethoxyethane and methoxypropane are metamers
(C) But-2-ene shoes optical isomerism
(D) But-1-ene and But-2-ene are functional isomers
(E) Pentane and 2, 2-dimethylpropane are chain isomers
The correct statements are
(1) A, B, D only (2) B, C, D only (3) A, B, E only (4) A, B, D, E only

Ans. (3)

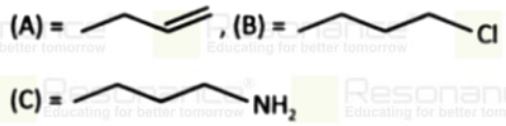
16. Which of the following compound is paramagnetic in nature?
(1) $[Ni(CO)_4]$ (2) $[Ni(CN)_4]^{2-}$ (3) $[NiCl_4]^{2-}$ (4) $[Co(H_2O)_6]^{3+}$

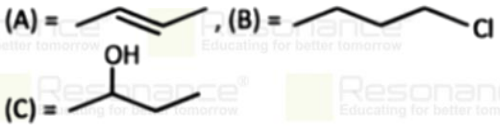
Ans. (3)

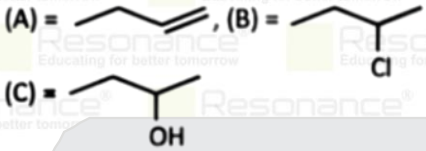
17. Observe the following reaction sequence:

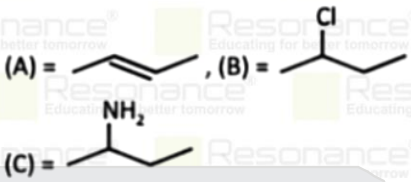


Which of the following is correct structure of A, B and C?

(1) 

(2) 

(3) 

(4) 

Ans. (4)

18. Given below are two statements

Statement I: When electric discharge is put on hydrogen, it emits discrete frequency in electromagnetic spectrum.

Statement II: Frequency of He^{+}ion **2**nd line of Balmer series is equal to first line of Lyman series of H -atom.

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

Ans. (1)

19. $NaCl(s) + K_2Cr_2O_7(s) \xrightarrow[H_2SO_4]{Conc} A$

$A \xrightarrow{NaOH} B$

$B \xrightarrow{H_2O_2/H_2SO_4} C$

If number of O_2^{-2} atoms in $C = X$
If number of O^{-2} atoms in $C = Y$
If oxidation state of Cr in $C = Z$
Then $(X + Y + Z)$ is-

Ans. (11)

20.

$PbCl_2 + K_2CrO_4 \rightarrow A + KCl$

$A + \underset{(ex)}{NaOH} \rightarrow B + Na_2CrO_4$

$AleSO_4 + CH_3COONH_4 \rightarrow C + (NH_4)_2SO_4$

Find A, B, C.

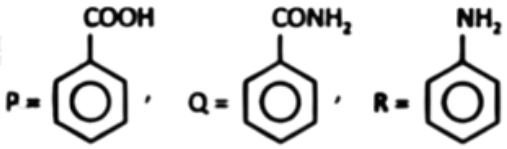
(1) A : $PbCrO_4$ B : PbO_2 C : $Pb(OH)_2$
(2) A : $PbCrO_4$ B : PbO C: $[Pb(NH_3)_4]^{2+}$
(3) A: $PbCrO_4$ B : $Na_2[Pb(OH)_4]$ C : $Pb(CH_3COO)_2$
(4) A: PbO_2 B : $Pb(OH)_2$ C: $[Pb(CH_3COO)_4]^{2-}$

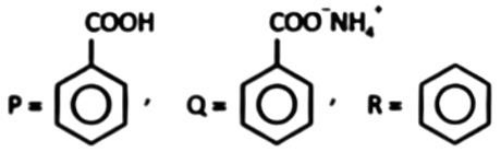
Ans. (3)

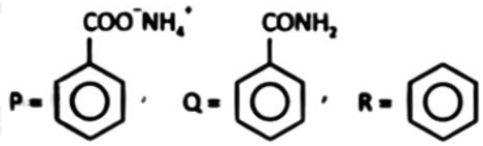
21. pH and conductance of a solution of HA are 5 and 4×10^{-5} s ; respectively the standard solution is present in cell having length 15 cm and area = 1 cm^2 [Assume degree of dissociation of HA $\ll$ 1] then calculate the λ_∞

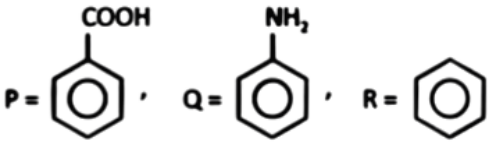
Ans. (60000)

22. Observe the following reaction sequence:
Which of the following is the correct structure for P, Q and R?

(1) 

(2) 

(3) 

(4) 

Ans. (1)