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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

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IIT-JEE Since 2002

52979

Classroom: 35901 | Distance: 17078

Selections in JEE (Main)/
AIEEE Since 2009

262693

Classroom: 194471 | Distance: 68222

Selections in NEET (UG)/
AIPMT/AIIMS Since 2012

22733

Classroom: 15409 | Distance: 7324

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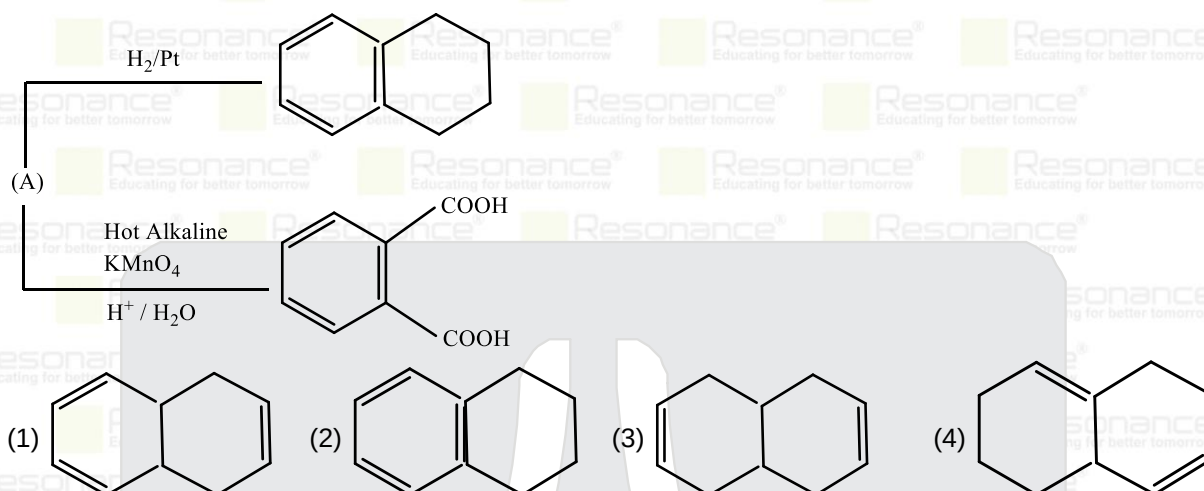
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PART : CHEMISTRY

1.



Ans. (1)

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

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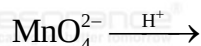
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7. In the following reaction,



Manganate ion undergoes ion undergoes disproportionation to form

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

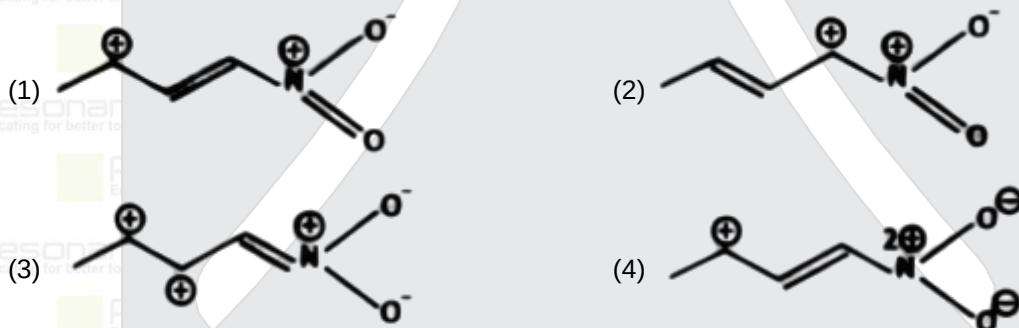
Ans. (2)

9. 80 mL of organic compound is mixed with 264 mL O_2 and ignited. It gives 224 mL of gaseous mixture at NTP. After passing KOH 64 mL of gas remains. The organic compound is

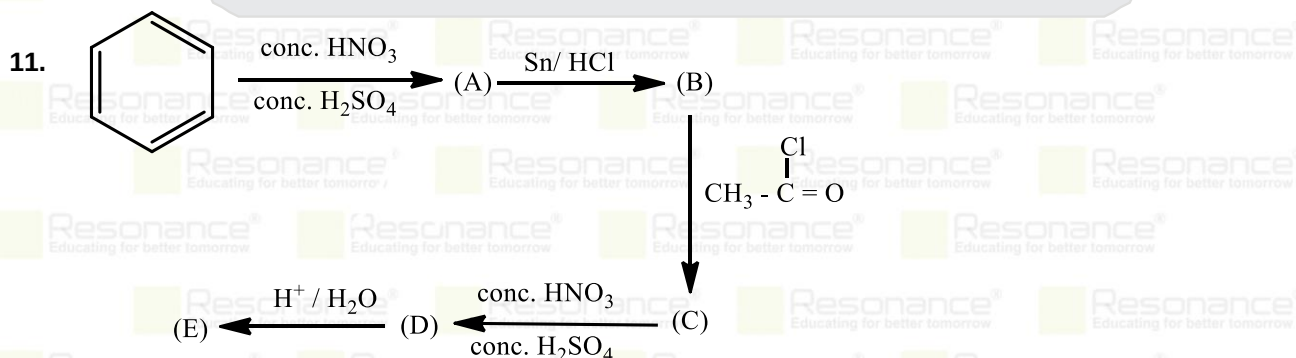
- (1) C_2H_4 (2) C_2H_2 (3) C_4H_{10} (4) C_3H_6

Ans. (2)

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



Ans. (1)



% of nitrogen in the final product is...?

Ans. (20)

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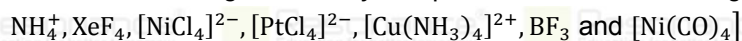
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12. Out of the following, how many compounds have tetrahedral geometry?



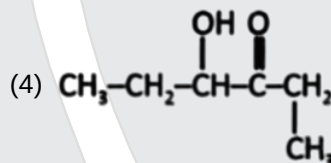
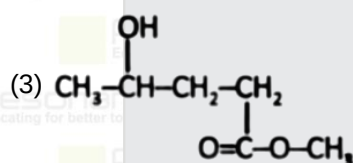
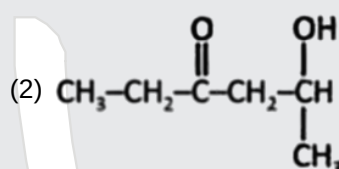
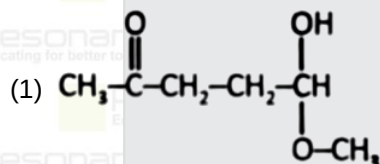
Ans. (3)

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 . $K_f = 5 \text{ K kg/mol}$.

(Report to nearest integer) (AB_2) and AB are non electrolyte.

Ans. (145)

14. $\text{C}_6\text{H}_{12}\text{O}_3$ gives positive iodoform test on hydrolysis with dil. acid product formed gives Tollen and iodoform test both. Find structure of $\text{C}_6\text{H}_{12}\text{O}_3$.



Ans. (1)

15. Consider the following statements.

- (A) Propanal and Propanone are functional isomers
- (B) Ethoxyethane and methoxypropane are metamers
- (C) But-2-ene shows 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

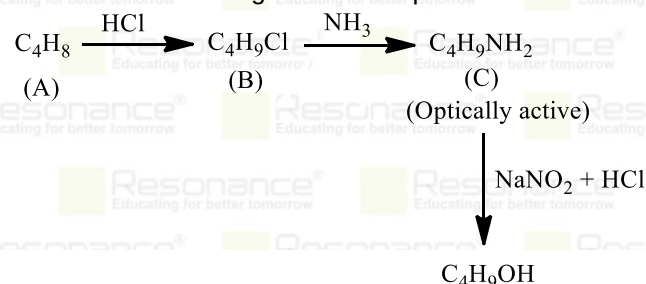
Ans. (3)

16. Which of the following compound is paramagnetic in nature?

- (1) $[\text{Ni}(\text{CO})_4]$
- (2) $[\text{Ni}(\text{CN})_4]^{2-}$
- (3) $[\text{NiCl}_4]^{2-}$
- (4) $[\text{Co}(\text{H}_2\text{O})_6]^{3+}$

Ans. (3)

17. Observe the following reaction sequence:



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

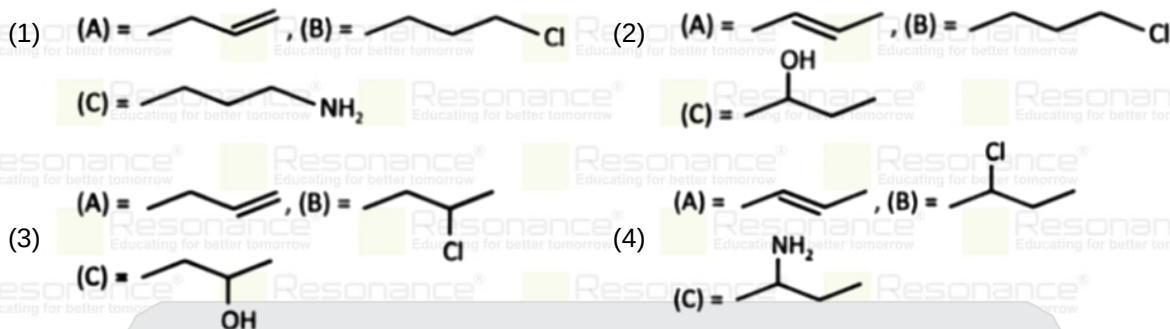
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Ans. (4)

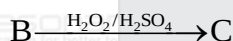
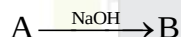
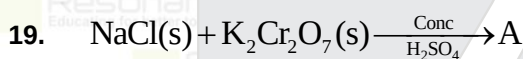
18. Given below are two statements

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

Statement II: Frequency of He^+ ion 2nd 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)



If number of O^{2-} atoms in C = X

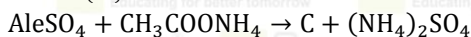
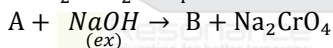
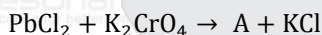
If number of O^{2-} atoms in C = Y

If oxidation state of Cr in C = Z

Then (X + Y + Z) is-

Ans. (11)

20.



Find A, B, C.

- | | | |
|--------------------------|------------------------------------|--|
| (1) A : PbCrO_4 | B : PbO_2 | C : Pb(OH)_2 |
| (2) A : PbCrO_4 | B : PbO | C : $[\text{Pb(NH}_3)_4]^{2+}$ |
| (3) A : PbCrO_4 | B : $\text{Na}_2[\text{Pb(OH)}_4]$ | C : $\text{Pb(CH}_3\text{COO)}_2$ |
| (4) A : PbO_2 | B : Pb(OH)_2 | C : $[\text{Pb(CH}_3\text{COO)}_4]^{2-}$ |

Ans. (3)

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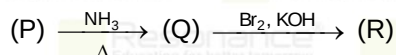
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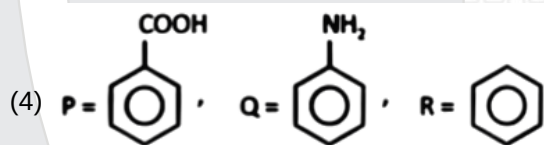
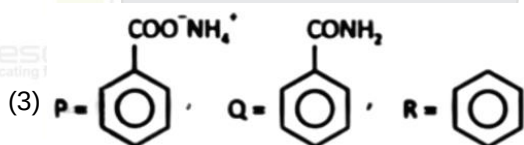
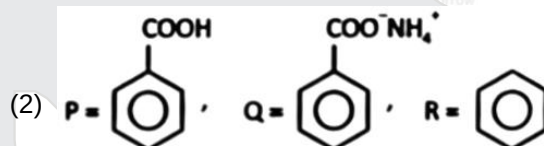
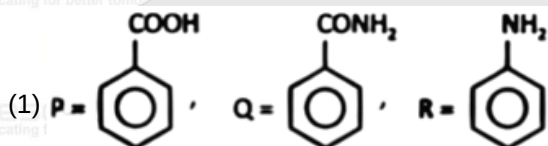
21. pH and conductance of a solution of HA are 5 and $4 \times 10^{-5} \text{ S}$; respectively the standard solution is present in cell having length 15 cm and area = 1 cm^2 [Assume degree of dissociation of HA $\ll 1$] then calculate the λ_{∞}

Ans. (60000)

22. Observe the following reaction sequence:



Which of the following is the correct structure for P, Q and R?



Ans. (1)

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