# JEE Main 2026 April 8 Shift 2 Chemistry

## Question Paper

Conducted by National Testing Agency (NTA)

### General Instructions

**(i)** The test is of 3 hours duration.

**(ii)** This test paper consists of 75 questions. Each subject (PCM) has 25 questions. The maximum marks are 300.

**(iii)** This question paper contains Three Parts. Part-A is Physics, Part-B is Chemistry and Part-C is Mathematics. Each part has only two sections: Section-A and Section-B.

**(iv)** Section - A : Attempt all questions.

**(v)** Section - B : Attempt all questions.

**(vi)** Section - A (01 – 20) contains 20 multiple choice questions which have only one correct answer. Each question carries +4 marks for correct answer and –1 mark for wrong answer.

**(vii)** Section - B (21 – 25) contains 5 Numerical value based questions. The answer to each question should be rounded off to the nearest integer. Each question carries +4 marks for correct answer and –1 mark for wrong answer.

**1. Calculate $|\Delta H^\circ|$ for the following reaction (in kJ/mol):**

$$2H_2S(g) + 3O_2(g) \rightarrow 2SO_2(g) + 2H_2O(l)$$

Given data:

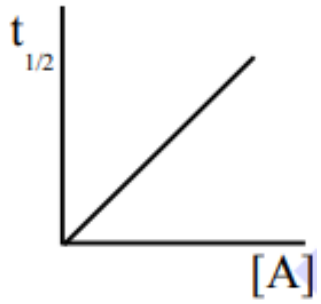
$\Delta H_f^\circ(H_2S(g)) = -20.6\,\text{kJ/mol}$,

$\Delta H_f^\circ(SO_2(g)) = -296.8\,\text{kJ/mol}$,

$\Delta H_f^\circ(H_2O(l)) = -285.8\,\text{kJ/mol}$

**2. Statement-I:** When temperature is increased from 298 K to 308 K, having $E_a = 12.72\,\text{Kcal mol}^{-1}$, Rate constant (K) is doubled.

**Statement-II:** For a first (1st) order reaction $A \rightarrow B$, the following graph is valid.




(A) Both Statement I and Statement II are correct.

(B) Statement I is correct but Statement II is incorrect.

(C) Statement I is incorrect but Statement II is correct.

(D) Both Statement I and Statement II are incorrect.

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**3.** $\mathbf{E^0}_{Fe^{2+}/Fe} = x$ **volts,** $E^0{}_{Fe^{3+}/Fe^{2+}} = y$ **volts.**

$Calculate E^0{}_{Fe^{2+}/Fe^{3+}}$ **in volts.**

**(A)** $3x - 2y$

**(B)** $3y - 2x$

**(C)** $2x - 3y$

**(D)** $2y - 3x$

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**4. Calculate the equilibrium constant for the following equilibrium:**

$$\frac{1}{2}X_2 + \frac{1}{2}Y_2 \rightleftharpoons XYZ$$

**Given:**

$$2XY \rightleftharpoons X_2 + Y_2, \quad K_1 = 2.5 \times 10^{-5}$$

$$\frac{1}{2}Z_2 + XY \rightleftharpoons XYZ, \quad K_2 = 5 \times 10^{-3}$$

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**5. Wavelengths of two photons are given as $\lambda_1 = 3000\,\text{Å}$ and $\lambda_2 = 6000\,\text{Å}$ respectively. Calculate the ratio of their energies $\left(\frac{E_1}{E_2}\right)$.**

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**6. Statement-I: 30% (w/w) methanol in CCl have mole fraction of solvent equal to 0.33.**
**Statement-II: CCl and methanol mixture show positive deviation from Raoult's law.**

**(A) Both Statement I and Statement II are correct.**
**(B) Statement I is correct but Statement II is incorrect.**
**(C) Statement I is incorrect but Statement II is correct.**
**(D) Both Statement I and Statement II are incorrect.**

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**7. Statement-I: $K_b$ is more than $K_f$ for water.**
**Statement-II: When we add a non-volatile solute in water, elevation in boiling point is more than depression in freezing point.**

**(A) Both Statement I and Statement II are correct.**
**(B) Statement I is correct but Statement II is incorrect.**
**(C) Statement I is incorrect but Statement II is correct.**
**(D) Both Statement I and Statement II are incorrect.**

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**8. $CaCO_3(s) \rightleftharpoons CaO(s) + CO_2(g)$, $K_{p1} = 8 \times 10^{-2}$**
**$C(s) + CO_2(g) \rightleftharpoons 2CO(g)$, $K_{p2} = 2$**

If the partial pressure of CO at equilibrium is $x \times 10^{-1}$ atm, then find the value of $x$.

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9. Match the following:

| List-I (Mass of molecule) | | List-II (Number of molecule) | |
|---|---|---|---|
| (P) | 3.6 mg of $H_2O$ | (I) | $0.5 \times 10^{-4}\ N_A$ |
| (Q) | 1.8 mg of Carbon | (II) | $2 \times 10^{-4}\ N_A$ |
| (R) | 4.9 mg of $H_2SO_4$ | (III) | $1 \times 10^{-4}\ N_A$ |
| (S) | 5.85 mg of NaCl | (IV) | $1.5 \times 10^{-4}\ N_A$ |

(A) P-III, Q-I, R-II, S-IV

(B) P-II, Q-IV, R-I, S-III

(C) P-II, Q-IV, R-III, S-I

(D) P-II, Q-I, R-IV, S-III

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10. Statement I: Among the following set of ionic species, [$Cr^3$, $Mn^2$]; [Ti, $V^2$]; [$Sc^3$, V] and [$Co^3$, $Cu^2$] three sets have both ions are coloured.

Statement II: Among the following set of ionic species [$Lu^3$, $La^3$]; [$Ln^3$, Ce]; [$Yb^2$, $Eu^2$] and [$Nd^3$, $Sm^3$] three sets have both ions diamagnetic in nature.

(A) Both Statement I and Statement II are correct.

(B) Statement I is correct but Statement II is incorrect.

(C) Statement I incorrect but Statement II is correct.

(D) Both Statement I and Statement II are incorrect.

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11. For the given coordination compounds:

**1)** $[Co(ox)_3]^{3-}$ **2)** $[Fe(CN)_6]^{3-}$ **3)** $[Ni(CN)_4]^{2-}$ **4)** $[NiCl_4]^{2-}$
**5)** $[Ni(CO)_4]$ **6)** $[MnBr_4]^{2-}$ **7)** $[CoF_6]^{3-}$ **8)** $[Cr(H_2O)_3F_3]$

**The number of paramagnetic species are:**

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**12. Statement I: d-Block elements utilize their only 3d electrons for bonding on the surface of catalyst.**
**Statement II: This leads to strengthening of bonds in the reacting molecules.**

**(A) Both Statement I and Statement II are correct.**
**(B) Statement I is correct but Statement II is incorrect.**
**(C) Statement I is incorrect but Statement II is correct.**
**(D) Both Statement I and Statement II are incorrect.**

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**13. Consider the statements related to group 15 hydrides.**

**(A) Stability of hydrides decreases down the group.**
**(B) Reducing nature of hydrides increases down the group.**
**(C) Lone pair donating tendency increases down the group.**
**(D) H–E–H bond angle decreases down the group.**

**(A) A, B and C are correct.**
**(B) A, B and D are correct.**
**(C) B and C are correct.**
**(D) A, C and D are correct.**

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**14.**

| Column-I | Column-II |
|---|---|
| Configuration (n = 2) | IE values (kJ/mol) |
| (A) $ns^2np^1$ | (P) 2080 |
| (B) $ns^2np^6$ | (Q) 801 |
| (C) $ns^2$ | (R) 1402 |
| (D) $ns^2np^3$ | (S) 899 |

**(A) A → P; B → S; C → Q; D → R**

**(B) A → Q; B → R; C → P; D → S**

**(C) A → Q; B → P; C → S; D → R**

**(D) A → R; B → P; C → S; D → Q**

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**15. Bromine trifluoride auto ionizes into $BrF_2^+$ and $BrF_4^-$. The geometry of these ions respectively are:**

**(A) Linear , square planar**

**(B) Bent , square planar**

**(C) Bent , see-saw**

**(D) Linear , tetrahedral**

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**16. Benzene reacts with CO/HCl/AlCl and give 'P'.**

**Benzene reacts with CH-C-Cl / AlCl to give 'Q'.**

**P and Q react with each other in presence of NaOH / HO give product Z. Find number of e in product Z.**

**(A) 12**

**(B) 14**

**(C) 16**

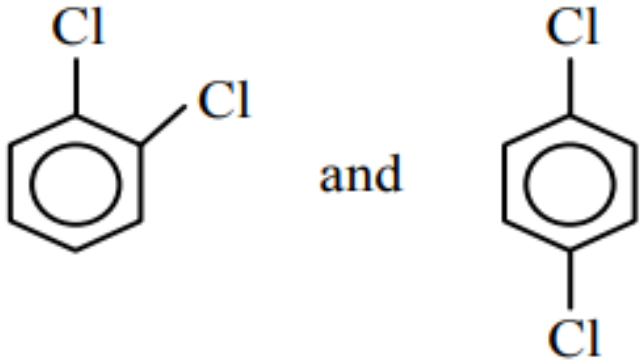
**(D) 18**

17. Statement 1:

Boiling point order is in decreasing order due to decreasing Vanderwaal's forces.

Statement 2:

P-dichlorobenzene has more melting point value due to its symmetric structure than O-dichlorobenzene while it has less boiling point than O-dichlorobenzene.



(A) Both Statement I and Statement II are correct.

(B) Statement I is correct but Statement II is incorrect.

(C) Statement I is incorrect but Statement II is correct.

(D) Both Statement I and Statement II are incorrect.

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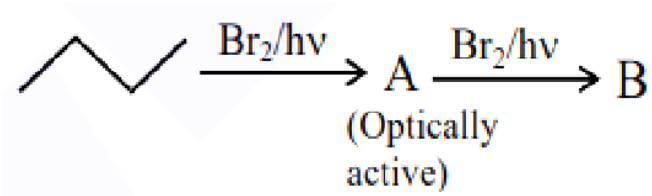
18. How many dibromo products are possible for 'B' (including stereoisomer)?



(A) 3

(B) 5

(C) 6

(D) 8

**19. Which of the following compounds give a positive neutral $FeCl_3$ test?**

**(A) Threonine**

**(B) Cysteine**

**(C) Tyrosine**

**(D) Serine**

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**20. Statement-1: During fractional distillation, higher boiling point will condense first.**
**Statement-2: In fractionating column, one which has higher boiling point value will be more in concentration above the fractionating column.**

**(A) Both Statement I and Statement II are correct.**

**(B) Statement I is correct but Statement II is incorrect.**

**(C) Statement I is incorrect but Statement II is correct.**

**(D) Both Statement I and Statement II are incorrect.**

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**21. Which of the following statement(s) are incorrect?**

**(A) All oligosaccharides give same monosaccharide on acidic hydrolysis.**

**(B) All monosaccharides are reducing sugar.**

**(C) Starch and cellulose are long chain polymer high molecular mass.**

**(D) Open chain glucose and cyclic $\alpha$ and $\beta$-D-glucose are in equilibrium in aqueous solution.**

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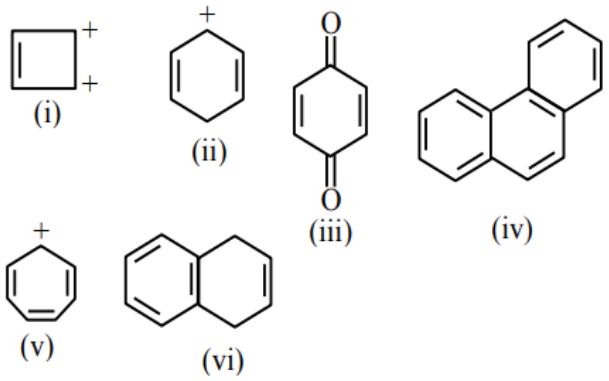
**22. Find total number of aromatic compounds from the given organic molecules.**




**(A) 3**

**(B) 4**

**(C) 5**

**(D) 6**

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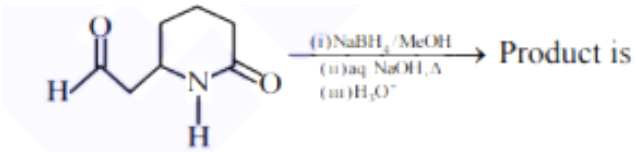
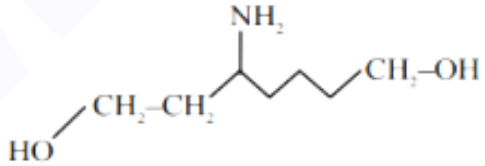
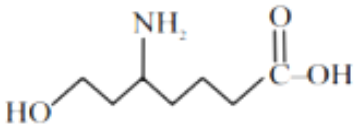
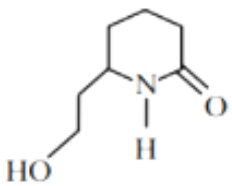
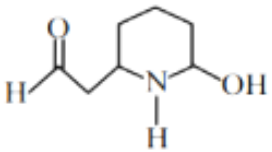
**23.**




(1) 

(2) 

(3) 

(4) 

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**24. Which of the following statement is correct about Hoffmann's bromamide degradation**

 

**reaction?**

**(a) Alkyl amide do not react.**

**(b) Secondary amide do not form secondary amide.**

**(c) Ratio of NaOH and Br is 4 : 2.**

**(d) NaCO, NaBr and HO also formed along with amine.**

**(A) b, c and d only**

**(B) a, b and c only**

**(C) b and d only**

**(D) a, b, c and d**

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