JEE Main 2026 April 8 Shift 2 Chemistry

Question Paper

Conducted by National Testing Agency (NTA)

General Instructions

(i) **Duration:** The total duration of the examination is 1 hours (60 minutes).

(ii) **Total Marks:** The complete Chemistry paper carries a maximum of 100 marks.

(iii) **Structure:** The paper consists of two sections:

- **Section A:** 20 Multiple Choice Questions (MCQs).
- **Section B:** 5 Numerical Value Type Questions.

(iv) **Compulsory Questions:** All 25 questions are compulsory.

(v) Each question has four options. Only **one** option is correct.

(vi) **Correct Answer:** +4 marks.

(vii) **Incorrect Answer:** −1 mark (Negative marking).

(viii) **Unanswered/Marked for Review:** 0 marks.

Chemistry Section - A

1. Match List - I with List - II.

	List - I Mass of substance		List - II Number of atoms
A.	1.8 mg water	I.	$2\times10^{-4}\times N_A$
B.	9.8 mg sulphuric acid	II.	$1.5\times10^{-4}\times N_A$
C.	1.8 mg carbon	III.	$3\times10^{-4}\times N_A$
D.	5.85 mg salt (NaCl)	IV.	$7\times10^{-4}\times N_A$

Choose the correct answer from the options given below :

(A) A-IV, B-III, C-I, D-II

(B) A-III, B-II, C-IV, D-I

(C) A-III, B-IV, C-II, D-I

(D) A-III, B-IV, C-I, D-II

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2. Given below are two statements :

Given : Molar mass of C, H, O, Cl are 12, 1, 16 and 35.5 g mol^{-1}, respectively

Statement I : In 30% (w/w) solution of methanol in CCl_4 (at T K), the mole fraction of CCl_4 is equal to 0.33.

Statement II : Mixture of methanol and CCl_4 shows positive deviation from Raoult's law.

In the light of the above statements, choose the correct answer from the options given below :

(A) Both Statement I and Statement II are true

(B) Both Statement I and Statement II are false

(C) Statement I is true but Statement II is false

(D) Statement I is false but Statement II is true

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3. Bromine trifluoride autoionizes to form BrF_2^+ and BrF_4^-. The shapes of the cation and anion are respectively _____, and _____.

(A) bent, square planar

(B) bent, see-saw

(C) linear, tetrahedral

(D) linear, square planar

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4. Which of the following statements are not correct ?

A. For water, magnitude of K_b is more than the magnitude of K_f.

B. The elevation in boiling point of water when a non-volatile solute is added to it is larger in magnitude than its depression in freezing point.

C. Osmotic pressure measurement is preferred over any other colligative property to determine molar mass of proteins and polymers.

D. The dimerised form of benzoic acid in benzene is $C_6H_5 - C(=O)OH \ldots O = C - C_6H_5$

Choose the correct answer from the options given below :

(A) A and B only

(B) A and D only

(C) A, B and D only

(D) A, C and D only

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5. Consider the following reactions in which all the reactants and products are present in gaseous state

$2xy \rightleftharpoons x_2 + y_2 \quad K_1 = 2.5 \times 10^5$

$xy + \frac{1}{2}z_2 \rightleftharpoons xyz \quad K_2 = 5 \times 10^{-3}$

The value of K_3 for the equilibrium $\frac{1}{2}x_2 + \frac{1}{2}y_2 + \frac{1}{2}z_2 \rightleftharpoons xyz$ is :

(A) 2.5×10^{-3}

(B) 2.5×10^{3}

(C) 1.0×10^{-5}

(D) 5×10^{-3}

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6. Given at 298 K :

$E^{\ominus}_{Fe^{2+}/Fe} = X$ **Volt**

$E^{\ominus}_{Fe^{3+}/Fe} = Y$ **Volt**

The $E^{\ominus}_{Fe^{3+}/Fe^{2+}}$ in Volt at 298 K is given by :

(A) $2X - 3Y$

(B) $3Y - 2X$

(C) $3Y + 2X$

(D) $Y + X$

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7. Given below are two statements :

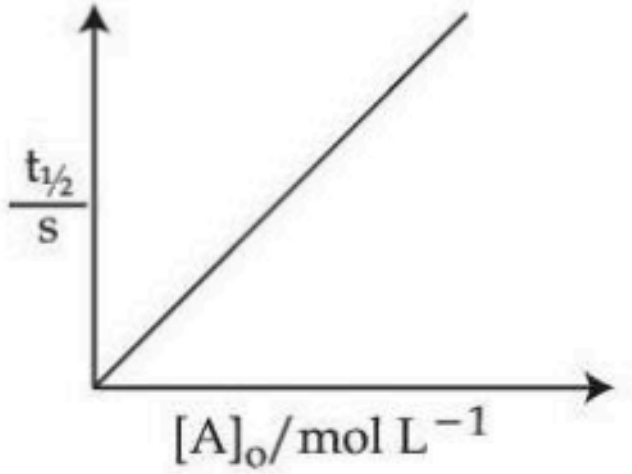
$R = 8.314$ **J K^{-1} mol^{-1} and** 1 **cal** $= 4.2$ **J**

Statement I : When $E_a = 12.6$ kcal/mol, the room temperature rate constant is doubled by a 10°C increase in temperature (298 K to 308 K)

Statement II : For a first order reactions $A \rightarrow B$, [Graph of $t_{1/2}$ vs $[A]_0$ is a straight line passing through origin].

Here $[A]_0$ is the initial concentration of A and $t_{1/2}$ is half life of reaction.

In the light of the above statements, choose the correct answer from the options given below :



(A) Both Statement I and Statement II are true

(B) Both Statement I and Statement II are false

(C) Statement I is true but Statement II is false

(D) Statement I is false but Statement II is true

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8. Match List - I with List - II.

	List - I Electronic configuration of neutral atom (where n = 2)		List - II 1st Ionization Energy (kJ mol^{-1})
A.	ns^2	I.	2080
B.	ns^2np^1	II.	899
C.	ns^2np^3	III.	800
D.	ns^2np^6	IV.	1402

Choose the correct answer from the options given below :

(A) A-II, B-III, C-IV, D-I

(B) A-IV, B-III, C-II, D-I

(C) A-III, B-II, C-IV, D-I

(D) A-III, B-II, C-I, D-IV

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9. Find the correct statements related to group 15 hydrides.

A. Reducing nature increases from NH_3 to BiH_3

B. Tendency to donate lone pair of electrons decreases from NH_3 to BiH_3

C. The stability of hydrides decreases from NH_3 to BiH_3

D. HEH bond angle decreases from NH_3 to SbH_3 (E = Elements of group 15)

Choose the correct answer from the options given below :

(A) A and B only

(B) B and C only

(C) A, B, C and D

(D) A, C and D Only

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10. Given below are two statements :

Statement I : The number of pairs among $[Ti^{4+}, V^{2+}]$, $[V^{2+}, Mn^{2+}]$, $[Mn^{2+}, Fe^{3+}]$ **and** $[V^{2+}, Cr^{2+}]$ **in which both ions are coloured is 3.**

Statement II : The number of pairs among $[La^{3+}, Yb^{2+}]$, $[Lu^{3+}, Ce^{4+}]$ **and** $[Ac^{3+}, Lr^{3+}]$ **ions in which both are diamagnetic is 3.**

In the light of the above statements, choose the correct answer from the options given below :

(A) Both Statement I and Statement II are correct

(B) Both Statement I and Statement II are incorrect

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

(D) Statement I is incorrect but Statement II is correct

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11. Given below are two statements for catalytic properties of transition metals.

Statement I : First row transition metals which act as catalyst utilise their 3d electrons only for formation of bonds between reactant molecules and atoms on the surface of catalyst.

Statement II : There is increase in the concentration of reactants on the surface of catalyst which strengthens the bonds in reacting molecules.

In the light of the above statements, choose the correct answer from the options given below :

(A) Both Statement I and Statement II are correct

(B) Both Statement I and Statement II are incorrect

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

(D) Statement I is incorrect but Statement II is correct

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12. Given below are two statements :

Statement I : Vapours of the liquid with higher boiling point condense before vapours of the liquid with lower boiling points in fractional distillation.

Statement II : The vapours rising up in the fractionating column become richer in high boiling

component of the mixture.

In the light of the above statements, choose the correct answer from the options given below :

(A) Both Statement I and Statement II are true

(B) Both Statement I and Statement II are false

(C) Statement I is true but Statement II is false

(D) Statement I is false but Statement II is true

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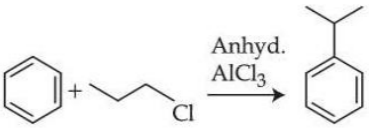
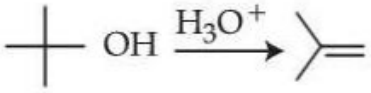
13. The major product of which of the following reaction is not obtained by rearrangement reaction ?

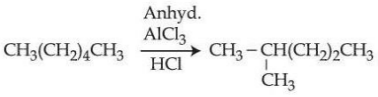
(A)



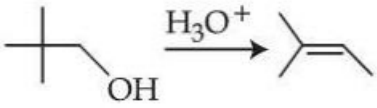
(B)



(C)



(D)



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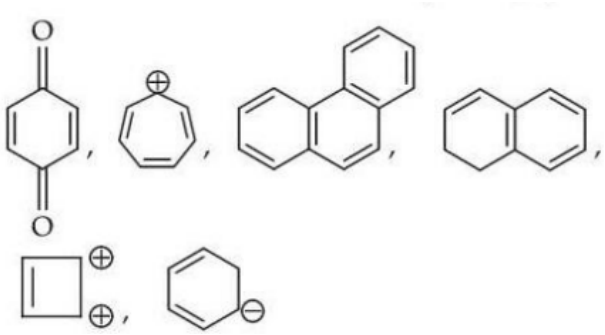
14. The total number of aromatic compounds/species from the following is



(A) 6

(B) 4

(C) 3

(D) 5

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15. n-Butane on monochlorination under photochemical condition gives an optically active compound "P". "P" on further chlorination gives dichloro compounds. The number of dichloro compounds obtained (ignore stereoisomers) is :

(A) 3

(B) 4

(C) 5

(D) 6

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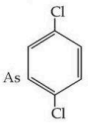
16. Given below are two statements :

Statement I : Due to increase in van der Waals forces, the order of boiling points is $CH_3CH_2CH_2I > CH_3CH_2I > CH_3I$.

Statement II : As  is more symmetric, its melting point is higher than  , however its boiling point is lower than 

(A) Both Statement I and Statement II are true

(B) Both Statement I and Statement II are false

(C) Statement I is true but Statement II is false

(D) Statement I is false but Statement II is true

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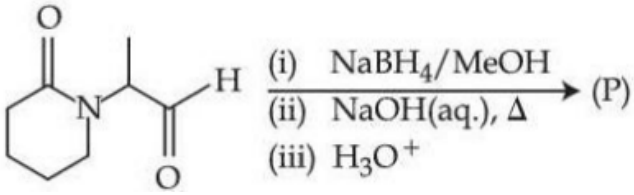
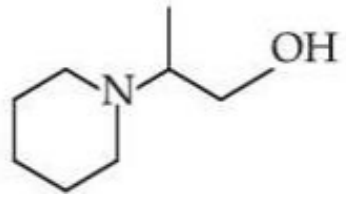
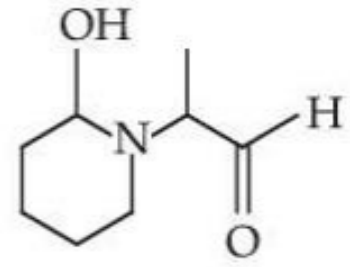
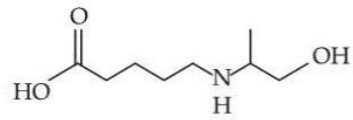
17. Consider the following reaction.

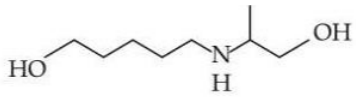


The major product (P) formed is :

(A) 

(B) 

(C) 

(D) 

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18. Which statements are True ?

A. In Hoffmann bromamide degradation, 4 moles of NaOH and 2 moles of Br_2 are consumed per mole of an amide

B. Hoffmann bromamide reaction is not given by alkyl amides.

C. Primary amines can be synthesized by Hoffmann bromamide degradation.

D. Secondary amide on reaction with Br_2 and NaOH will give secondary amine.

E. The by-products of Hoffmann degradation are Na_2CO_3, NaBr and H_2O.

Choose the correct answer from the options given below :

(A) A, C and E only

(B) B, C and D only

(C) C and E only

(D) C, D and E only

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19. The incorrect statement from the following with respect to carbohydrates is :

(A) All monosaccharides are reducing sugars.

(B) The monosaccharide units obtained from hydrolysis of oligosaccharides are always the same.

(C) Starch and cellulose are typical examples of polysaccharides, which are very high molecular weight compounds of more than ten monosaccharide units.

(D) Open chain and cyclic structures co-exist at equilibrium that are responsible for certain properties as in the case of D-(+)-glucose.

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20. Which of the following amino acid will give violet coloured complex with neutral ferric chloride solution ?

(A) Threonine

(B) Serine

(C) Tyrosine

(D) Cysteine

Chemistry Section - B

21. Number of paramagnetic complexes among the following is _____.

$[MnBr_4]^{2-}$, $[NiCl_4]^{2-}$, $[Ni(CN)_4]^{2-}$, $[Ni(CO)_4]$, $[CoF_6]^{3-}$, $[Fe(CN)_6]^{4-}$, $[Mn(CN)_6]^{3-}$, $[Ti(CN)_6]^{3-}$, $[Cu(H_2O)_6]^{2+}$, $[Co(C_2O_4)_3]^{3-}$

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22. 'x' is the product which is obtained from benzene by reacting it with carbon monoxide and hydrogen chloride in the presence of cuprous chloride. 'y' is the major product obtained from the benzene by reacting it with ethanoyl chloride in the presence of anhydrous $AlCl_3$. Product (major) obtained by heating x and y in the presence of alkali is z. Total number of π (pi) electrons in z is _____.

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23. Consider two radiations of wavelengths $\lambda_1 = 2000$ Å and $\lambda_2 = 6000$ Å.
The ratio of the energies of these two radiations $\left(\frac{E_1}{E_2}\right)$ is _____ (Nearest integer).

24. Consider the reaction

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

The magnitude of enthalpy change for the reaction in kJ mol^{-1} is _____. (Nearest integer)

Given : $\Delta_f H^{\ominus}(H_2S) = -20.1$ **kJ mol^{-1}**

$\Delta_f H^{\ominus}(H_2O) = -286.0$ **kJ mol^{-1}**

$\Delta_f H^{\ominus}(SO_2) = -297.0$ **kJ mol^{-1}**

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25. Solid carbon, CaO and $CaCO_3$ are mixed and allowed to attain equilibrium at T K.

$CaCO_3(s) \rightleftharpoons CaO(s) + CO_2(g) \quad K_{p1} = 0.08$ **atm**

$C(s) + CO_2(g) \rightleftharpoons 2CO(g) \quad K_{p2} = 2$ **atm**

The partial pressure of CO is _____ $\times 10^{-1}$ **atm**
