# JEE Main 2026 April 4 Shift 1 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 number of moles of KMnO needed to oxidise the mixture containing one mole each of $FeC_2O_4$, $FeSO_4$, $Fe_2(C_2O_4)_3$, and $Fe_2(SO_4)_3$ in acidic medium.**

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**2. Find the ratio of wave number ($\nu$) of the 1st line of Balmer series and Brackett series for Hydrogen-like species.**

(A) $\frac{1}{0.09}$

(B) $\frac{0.81}{5}$

(C) $\frac{5}{0.81}$

(D) 0.09

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**3. The reaction follows 1st order reaction** $\mathrm{R} \rightarrow \mathrm{P}$

**Find the fraction of molecules dissociated in time** $t$**.** $[k_1 = \text{Rate constant}]$

(A) $1 - e^{-k_1 t}$

(B) $1 + e^{-k_1 t}$

(C) $1 - e^{+k_1 t}$

(D) $e^{-k_1 t}$

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**4. For the reaction**

$$\mathrm{A} + \mathrm{B} \rightleftharpoons \mathrm{C}, \quad K_p = 2.7 \times 10^{-5}$$

**Calculate** $K_p$ **for the reaction**

$$\frac{1}{3}\mathrm{A} + \frac{1}{3}\mathrm{B} \rightleftharpoons \frac{1}{3}\mathrm{C}$$

(A) $3 \times 10^{-3}$

(B) $\frac{1}{3} \times 10^{-3}$

(C) $9 \times 10^{-3}$

(D) $3 \times 10^{-2}$

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**5. Certain amount of non-volatile, non-electrolyte solute dissolved in 40g solvent, which decreases its vapour pressure from 760 torr to 750 torr. If boiling point of solvent and solution are 319.5 K and 320 K respectively. Find moles of solvent used (Kb of solvent = 0.3 K·Kg·mol$^{-1}$):**

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**6. Solution of 5 ml, 0.1 M $NH_3$ added with 250 ml, 0.1M $NH_4Cl$ solution. Calculate (pH $\times 10^{-2}$)**
**$pK_b(NH_4OH) = 4.74$** $(\log 5 = 0.7)$

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**7. Calculate the number of molecules and moles of $SO_2$ in its 1.479 liters at STP.**

(A) $3.92 \times 10^{22}, 0.065$
(B) $3.92 \times 10^{23}, 0.65$
(C) $1.96 \times 10^{22}, 0.033$
(D) $1.96 \times 10^{23}, 0.33$

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**8.** An ideal gas is placed in a container at $(P_1, V_1, T_1)$ and another ideal gas is placed in a different container at $(P_2, V_2, T_2)$ are mixed at final pressure of $P$ and final volume of $V$. Calculate the final temperature.

(A) $\frac{T_1T_2}{P_1V_1T_2+P_2V_2T_1} \cdot \frac{1}{PV}$
(B) $\frac{T_1T_2}{P_1V_1T_2+P_2V_2T_1} \cdot PV$
(C) $\frac{P_1V_1T_2+P_2V_2T_1}{T_1T_2} \cdot PV$
(D) $\frac{P_1V_1+P_2V_2}{T_1T_2} \cdot \frac{1}{PV}$

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**9. Statement-1:** Heat capacity at constant volume is always greater than heat capacity at constant pressure.
**Statement-2:** At constant volume as work done is zero, heat given to the chaotic motion is reflected by increase in temperature.

(A) Statement-1 and statement-2 both are correct.
(B) Statement-1 is correct but statement-2 is incorrect.
(C) Statement-1 is incorrect but statement-2 is correct.
(D) Both statement-1 and statement-2 are incorrect.

**10.** Statement-1: Under certain conditions, the covalency of oxygen can be up to 4. In $SO_2$, the oxidation state of oxygen is $-2$ and in $OF_2$, the oxidation state of oxygen is $+2$.
Statement-2: The anomalous behaviour of oxygen in the 16th group is due to its small size and high electronegativity.

(A) Statement-1 and statement-2 both are correct.
(B) Statement-1 is correct but statement-2 is incorrect.
(C) Statement-1 is incorrect but statement-2 is correct.
(D) Both statement-1 and statement-2 are incorrect.

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**11. Anion $X^-$ contains 45 neutrons and 36 electrons. The atomic mass, period number, and state in which "X" exists is:**

(A) Atomic mass: 80; Period number = 3; State = liquid
(B) Atomic mass: 35; Period number = 3; State = gas
(C) Atomic mass: 80; Period number = 4; State = liquid
(D) Atomic mass: 127; Period number = 5; State = solid

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**12. Find the value of $n, \ell, m,$ and $s$ for the 19th electron of a Cr atom.**

(A) $n = 3; \ell = 2; m = 1; s = +\frac{1}{2}$
(B) $n = 4; \ell = 0; m = 0; s = +\frac{1}{2}$
(C) $n = 2; \ell = 1; m = 1; s = -\frac{1}{2}$
(D) $n = 3; \ell = 2; m = 0; s = 0$

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**13. In the molecule $XeO_6^{4-}$; total number of lone pairs and $\sigma$ bond pairs on central atom Xe are:**

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**14.**

| **Column–I** | **Column–II** |
|---|---|
| Complex | Spin only magnetic moment (in BM) |
| (A) $[Cr(H_2O)_6]^{3+}$ | (P) 1.73 |
| (B) $[Cu(H_2O)_6]^{2+}$ | (Q) 3.87 |
| (C) $[Mn(H_2O)_6]^{2+}$ | (R) 0 |
| (D) $[Co(H_2O)_6]^{3+}$ | (S) 5.93 |

**Choose the correct match.**

(A) A $\rightarrow$ Q ; B $\rightarrow$ P ; C $\rightarrow$ S ; D $\rightarrow$ R

(B) A $\rightarrow$ P ; B $\rightarrow$ Q ; C $\rightarrow$ S ; D $\rightarrow$ R

(C) A $\rightarrow$ P ; B $\rightarrow$ Q ; C $\rightarrow$ R ; D $\rightarrow$ S

(D) A $\rightarrow$ Q ; B $\rightarrow$ S ; C $\rightarrow$ P ; D $\rightarrow$ R

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**15. (A)** Bond angle Cr–O–Cr in $CrO_7^{2-}$ is 126° **(B)** $Na_2Cr_2O_7$ is used as primary standard solution in titration. **(C)** $K_2Cr_2O_7$ oxidises $Fe^{2+}$ into $Fe^{3+}$ in acidic medium. **(D)** $CrO_4^{2-}$ and $Cr_2O_7^{2-}$ are interconvertible by changing pH.

(A) A, C, D only

(B) B, C, D only

(C) A, B, C only

(D) A, B, D only

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**16. Match the column:**

| | Column-I (Reaction) | | Column-II (Reagent) |
|---|---|---|---|
| (A) | Finkelstein reaction | (P) | NaI/Acetone |
| (B) | Swarts reaction | (Q) | Na/THF |
| (C) | Fittig reaction | (R) | $Cu_2Cl_2$/HCl |
| (D) | Sandmeyer reaction | (S) | $SbF_3$ |

**Match correct reagents with given reactions:**

(A) A $\rightarrow$ S ; B $\rightarrow$ Q ; C $\rightarrow$ P ; D $\rightarrow$ R

(B) A $\rightarrow$ P ; B $\rightarrow$ S ; C $\rightarrow$ Q ; D $\rightarrow$ R

(C) A $\rightarrow$ S ; B $\rightarrow$ Q ; C $\rightarrow$ R ; D $\rightarrow$ P

(D) A $\rightarrow$ Q ; B $\rightarrow$ P ; C $\rightarrow$ S ; D $\rightarrow$ R

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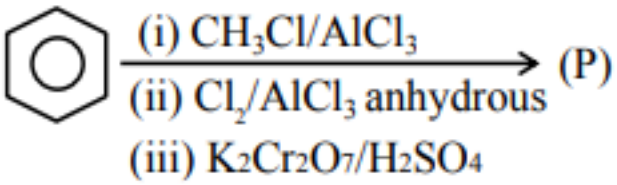
**17. When $X$ gm of product $P$ react with NaHCO, 11.2 $dm^3$ CO gas at STP is obtained. Find out the mass of $P$ in gram.**

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**18.** Arrange the following groups according to their decreasing order of electron withdrawing nature – COOH, CN, $I$, and $NO_2$.

(A) CN > $NO_2$ > $I$ > COOH

(B) $NO_2$ > CN > COOH > $I$

(C) COOH > CN > $I$ > $NO_2$

(D) $I$ > COOH > $NO_2$ > CN

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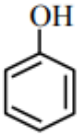
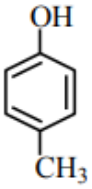
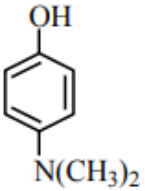
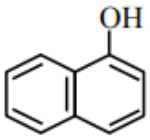
**19. Soluble in aqueous NaOH**

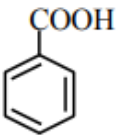
(A) 

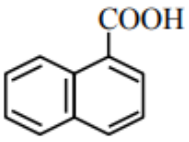
(B) 

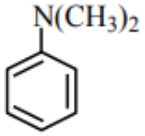
(C) 

(D) 

(E) 

(F) 

(G) 

(H) 

(A) 4

(B) 5

(C) 6

(D) 7

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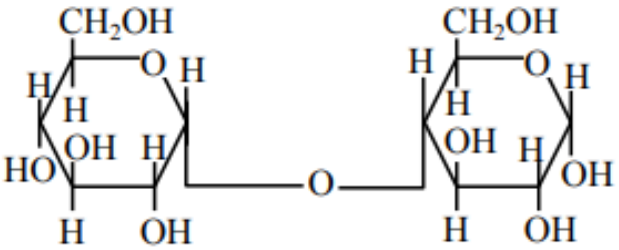
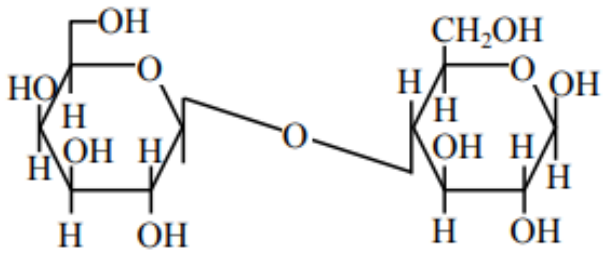
**20. Statement-1:** Maltose is a non-reducing sugar.



**Statement-2:** Lactose is a reducing sugar.



(A) Both statement 1 and statement 2 are correct.

(B) Statement 1 is correct but statement 2 is incorrect.

(C) Statement 1 is incorrect but statement 2 is correct.

(D) Both statement 1 and statement 2 are incorrect.

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**21. Match the column-I with column-II:**

| | **Column-I (Name of amino acid)** | | **Column-II (One letter code)** |
|---|---|---|---|
| (A) | Arginine | (P) | K Essential |
| (B) | Lysine | (Q) | R Essential |
| (C) | Aspartic acid | (R) | D Non essential |
| (D) | Glutamic acid | (S) | E Non essential |

**Choose the correct match.**

(A) A $\rightarrow$ P ; B $\rightarrow$ Q ; C $\rightarrow$ R ; D $\rightarrow$ S

(B) A $\rightarrow$ Q ; B $\rightarrow$ P ; C $\rightarrow$ S ; D $\rightarrow$ R

(C) A $\rightarrow$ Q ; B $\rightarrow$ P ; C $\rightarrow$ R ; D $\rightarrow$ R

(D) A $\rightarrow$ R ; B $\rightarrow$ S ; C $\rightarrow$ P ; D $\rightarrow$ Q

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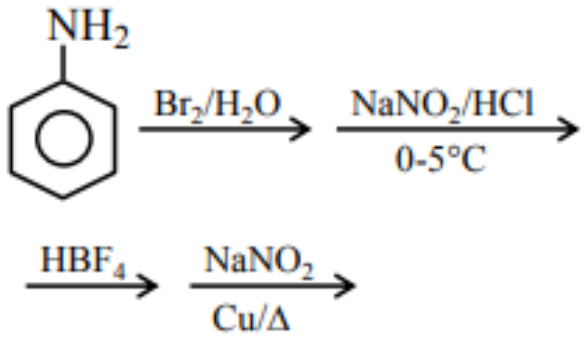
**22. IUPAC Name of the formed compound:**




(A) 2,4,6-Tribromo-1-nitrobenzene

(B) 4-Bromonitrobenzene

(C) 1,3,5-Tribromo-2-nitrobenzene

(D) 1,3,5-Tribromo-fluorobenzene

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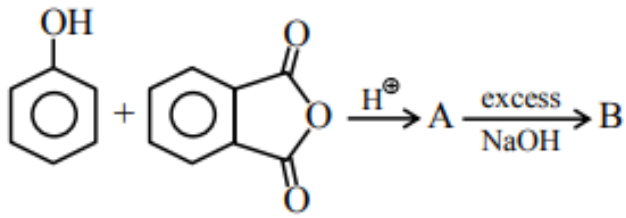
**23. Consider the following reaction:**




**What is the colour of the final compound B?**

(A) Violet

(B) Red

(C) Colourless

(D) Pink

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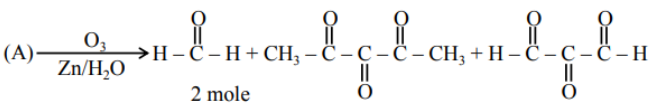
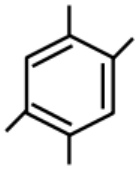
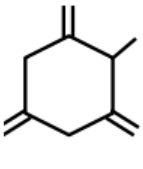
**24. Identify the structure of compound A in the following reaction:**

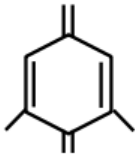


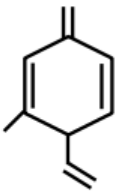

 

**Identify the structure of compound A.**

(1) 

(2) 

**(3)** 

(4) 

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**25. 2 gm of organic compound on heating with $AgNO_3$ in Carius method, 3.36 gm of AgBr was obtained. (% of carbon in organic compound is 26.7%)**

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