

Marking Scheme
Strictly Confidential
(For Internal and Restricted use only)
Senior Secondary School Examination, 2026 (XIIth)
SUBJECT NAME: - CHEMISTRY (043), (Q.P. CODE 56/4/1)

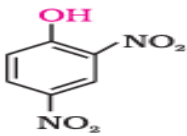
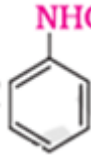

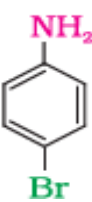


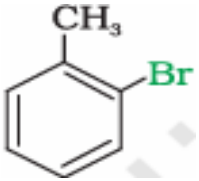

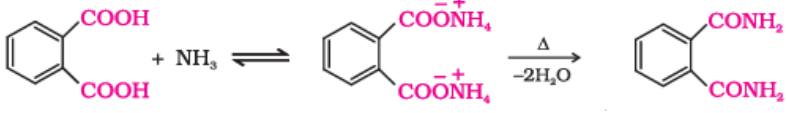
General Instructions: -

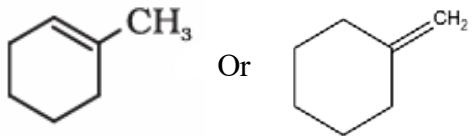
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| 1 | The CBSE has decided to introduce On Screen Marking (OSM) for the evaluation of Class XII answer Book with the 2026 Examination. |
| 2 | You are aware that evaluation is the most important process in the actual and correct assessment of the candidates. A small mistake in evaluation may lead to serious problems which may affect the future of the candidates, education system and teaching profession. To avoid mistakes, it is requested that before starting evaluation, you must read and understand the spot evaluation guidelines carefully. |
| 3 | “Evaluation policy is a confidential policy as it is related to the confidentiality of the examinations conducted, evaluation done and several other aspects. Its leakage to public in any manner could lead to derailment of the examination system and affect the life and future of millions of candidates. Sharing this policy/document to anyone, publishing in any magazine and printing in Newspaper/Website, etc. may invite action under various rules of the Board and IPC.” |
| 4 | Evaluation is to be done as per instructions provided in the Marking Scheme. It should not be done according to one's own interpretation or any other consideration. Marking Scheme should be strictly adhered to and religiously followed. However, while evaluating, answers which are based on latest information or knowledge and/or are innovative, they may be assessed for their correctness otherwise and due marks be awarded to them. In Class-XII, while evaluating two competency-based questions, please try to understand given answer and even if reply is not from marking scheme but correct competency is enumerated by the candidate, due marks should be awarded. |
| 5 | The Marking scheme carries only suggested value points for the answers. These are in the nature of Guidelines only and do not constitute the complete answer. The students can have their own expression and if the expression is correct, the due marks should be awarded accordingly. |
| 6 | The Head-Examiner must go through the first five answer books evaluated by each evaluator on the first day, to ensure that evaluation has been carried out as per the instructions given in the Marking Scheme. If there is any variation, the same should be zero after deliberation and discussion. The remaining answer books meant for evaluation shall be given only after ensuring that there is no significant variation in the marking of individual evaluators. |
| 7 | Evaluators will mark (✓) wherever answer is correct. For wrong answer CROSS 'X' be marked. Evaluators will not put right (✓) while evaluating which gives an impression that answer is correct and no marks are awarded. This is most common mistake which evaluators are committing. |
| 8 | If a question has parts, please award marks on the right-hand side for each part in the OSM Portal. Marks awarded for different parts of the question will be totaled up by the OSM System. |
| 9 | If a question does not have any parts, marks must be awarded in the left-hand margin in the OSM Portal. This may also be followed strictly. |

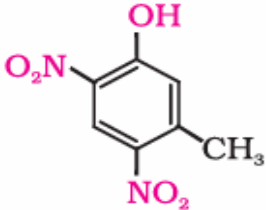
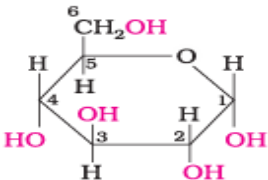
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| 10 | No marks to be deducted for the cumulative effect of an error. It should be penalized only once. |
| 11 | A full scale of marks _____ (example 0 to 80/70/60/50/40/30 marks as given in Question Paper) has to be used. Please do not hesitate to award full marks if the answer deserves it. |
| 12 | Every examiner has to necessarily do evaluation work for full working hours i.e., 8 hours every day and evaluate 20 answer books per day in main subjects and 25 answer books per day in other subjects (Details are given in Spot Guidelines). This is in view of the reduced syllabus and number of questions in question paper. |
| 13 | Ensure that you do not make the following common types of errors committed by the Examiner in the past :- <ul style="list-style-type: none"> • Answers marked as correct, but marks not awarded. (Ensure that the right tick mark is correctly and clearly indicated. It should merely be a line. Same is with the X for incorrect answer.) • Half or a part of answer marked correct and the rest as wrong, but no marks awarded. |
| 14 | While evaluating the answer books if the answer is found to be totally incorrect, it should be marked as cross (X) and awarded zero (0) Marks. |
| 15 | The Examiners should acquaint themselves with the guidelines given in the “Guidelines for Spot Evaluation” before starting the actual evaluation. |
| 16 | The candidates are entitled to obtain photocopy of the Answer Book on request on payment of the prescribed processing fee. All Examiners/Additional Head Examiners/Head Examiners are once again reminded that they must ensure that evaluation is carried out strictly as per value points for each answer as given in the Marking Scheme. |
| 17 | If a candidate attempts both alternatives/options in a question where only one option/ alternative is required to be attempted, the Evaluator shall award marks in both the options. The system will take the higher of two scores and disregard the other response. |
| 18 | In a question having two options/alternatives, if a candidate has attempted only one, then the evaluator shall mark “NA” (Not attempted) against the option that has not been attempted by the candidate. |

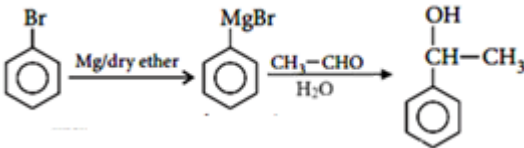
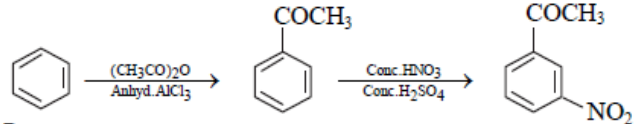
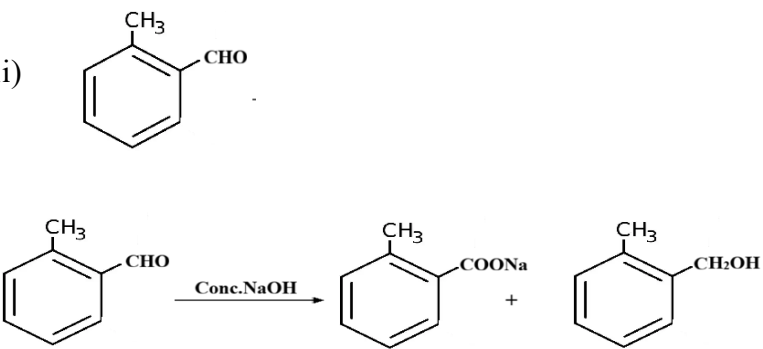
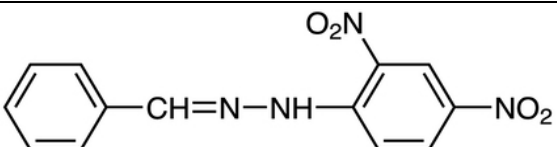
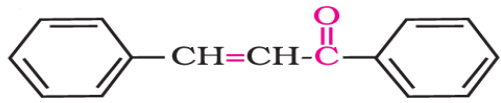
MARKING SCHEME
CHEMISTRY (Subject Code-043)
(PAPER CODE : 56/4/1) (26-04-43N)

| Q.No. | EXPECTED OUTCOMES/VALUE POINTS | Marks |
|-------|--|-------------------------------------|
| | SECTION - A | |
| 1. | (D) | 1 |
| 2. | (C) | 1 |
| 3. | (B) | 1 |
| 4. | (D) | 1 |
| 5. | (A) | 1 |
| 6. | (D) | 1 |
| 7. | (B) | 1 |
| 8. | (C) | 1 |
| 9. | (A) | 1 |
| 10. | (D) | 1 |
| 11. | (C) | 1 |
| 12. | (B) | 1 |
| 13. | (A) | 1 |
| 14. | (C) | 1 |
| 15. | (B) | 1 |
| 16. | (A) | 1 |
| | SECTION - B | |
| 17 | (a) Zero order, Example- Decomposition of gaseous ammonia on a hot platinum surface/ Decomposition of HI on gold surface <div style="text-align: right;">(Or any other one suitable example)</div> (b) When one of the reactants is in excess. | $\frac{1}{2}$ $\frac{1}{2}$ 1 |
| 18 | (a)(i) Bends is a painful medical condition experienced by Scuba divers when they come towards surface where the pressure gradually decreases leading to formation of bubbles of nitrogen in the blood blocking the capillaries. (ii) Anoxia is a condition experienced by people living at high altitudes due to low partial pressure of oxygen or due to low blood oxygen in their tissues making them feel weak and unable to think clearly. | 1 1 |
| | OR | |
| 18 | (b) Salt lowers the freezing point of snow which then melts and can be removed easily. | 1 |
| | Depression of Freezing point | 1 |
| 19 | (a) Tetraamminechloridonitrito-O-chromium(III) nitrate | 1 |
| | (b) Sodium dicyanidoargentate(I) | 1 |
| 20 | (a) Glucose and Galactose | 1 |

| | | |
|-------------|--|-------------------------------------|
| | (b) Deoxyribose sugar, Thymine base and Phosphoric acid | 1 |
| 21 | <p>(a) </p> <p>(b) $\text{CH}_3 - \text{CH}_2 - \underset{\text{Br}}{\overset{\text{CH}_3}{\text{C}}} - \text{CH}_3$</p> | 1 |
| SECTION - C | | |
| 22 | <p>(a) A  B  C </p> <p>(b) A  B  C </p> | <p>½X3</p> <p>½X3</p> |
| 23 | <p>(a) $\text{CH}_3 - \text{CH}_2 - \text{C} \equiv \text{N} + \text{C}_6\text{H}_5\text{MgBr} \xrightarrow[\text{H}_3\text{O}^+]{\text{ether}} \text{C}_2\text{H}_5 - \overset{\text{O}}{\underset{\text{C}_6\text{H}_5}{\text{C}}}$</p> <p>(b) </p> <p>(c) </p> | <p>1</p> <p>1</p> <p>1</p> |
| 24 | <p>(a) DC can change the composition of the solution.</p> <p>(b) Because silver electrode is reactive and participates in the electrode reactions whereas platinum is inert and does not take part in the chemical reaction and acts only as a source of electrons.</p> <p>(c) To prevent oxidation of Iron or rusting, as Mg gets readily oxidised in comparison to Iron.</p> | <p>1</p> <p>1</p> <p>1</p> |
| 25 | <p>(a)</p> <ul style="list-style-type: none"> • $[\text{Co}(\text{NH}_3)_6]\text{Cl}_3$ • Hexaamminecobalt(III) chloride • d^2sp^3 • diamagnetic | <p>1</p> <p>1</p> <p>½</p> <p>½</p> |

| | OR | |
|--------------------|---|---|
| 25 | <p>(b)(i) (I) Nil / zero (II) 2</p> <p>(ii) NH_3 being a strong field ligand pair up the unpaired electrons in Co^{3+} leaving two d-orbitals empty for d^2sp^3 hybridization forming inner orbital complex.</p> <p>Whereas it cannot pair up in Ni^{2+} as only one 'd' orbital is left empty after pairing which is not possible and hence outer d-orbital is used. / Diagrammatic representation</p> <p>(iii) $[(\text{Ph}_3\text{P})_3\text{RhCl}]$</p> <p>Used for hydrogenation of alkene</p> | <p>$\frac{1}{2} + \frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> |
| 26. | $\frac{p_1^\circ - p_1}{p_1^\circ} = ix_2 = i \frac{w_2 \times M_1}{M_2 \times w_1}$ $\frac{66 - p_1}{66} = 0.5 \times \frac{61 \times 78}{122 \times 500}$ $p_1 = 63.4 \text{ torr}$ <p>Alternate method</p> $\frac{p_1^\circ - p_1}{p_1^\circ} = ix_2 = i \frac{n_2}{n_1 + n_2}$ $\frac{66 - p_1}{66} = 0.5 \times \frac{\frac{61}{500}}{\frac{122}{78} + \frac{61}{122}}$ $p_1 = 63.61 \text{ torr}$ | <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> |
| 27 | <p>(a) $\text{Rate} = k[\text{H}_2\text{O}_2][\text{I}^-]$</p> <p>(b) Order w.r.t. $[\text{H}_2\text{O}_2]$ is 1</p> <p>Order w.r.t. $[\text{I}^-]$ is 1</p> <p>Overall order of reaction is 2</p> <p>(c) 2</p> | <p>1</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> |
| 28 | <p>(a) Tert-butyl bromide / $(\text{CH}_3)_3\text{CBr}$ / 2-Bromo-2-methylpropane</p> <p>(b)</p> <div style="text-align: center;">  </div> <p>(c) Because +R effect stabilizes the intermediate carbocation .</p> | <p>1</p> <p>1</p> <p>1</p> |
| SECTION - D | | |
| 29 | <p>(a) Step 1: Formation of protonated alcohol</p> $\text{CH}_3 - \text{CH}_2 - \ddot{\text{O}} - \text{H} + \text{H}^+ \xrightarrow{\text{Fast}} \text{CH}_3 - \text{CH}_2 - \overset{\oplus}{\underset{\text{H}}{\text{O}}} - \text{H}$ <p>Step 2: Formation of carbocation</p> $\text{CH}_3 - \text{CH}_2 - \overset{\oplus}{\underset{\text{H}}{\text{O}}} - \text{H} \rightleftharpoons \text{CH}_3 - \overset{\oplus}{\text{CH}}_2$ | <p>1</p> <p>$\frac{1}{2}$</p> |

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| 29 | <p>Step 3: Deprotonation</p> $\begin{array}{c} \text{H} \\ \\ \text{H}-\text{C}-\text{CH}_2^+ \\ \\ \text{H} \end{array} \rightleftharpoons \begin{array}{c} \text{H} \\ \\ \text{H}-\text{C}=\text{CH}_2 \\ \\ \text{H} \end{array} + \text{H}^+$ <p>(b)(i) Due to the absence of α – hydrogen atom OR</p> <p>(b) (ii)</p>  <p>(c) Because of electron withdrawing nature of $-\text{NO}_2$ group which increases the stability of phenoxide ion whereas methoxy is electron-donating group and decreases the stability of phenoxide ion.</p> | <p>$\frac{1}{2}$</p> <p>1</p> <p>1</p> <p>1</p> |
| 30 | <p>(a)(i) Glucose on reaction with $\text{H}_2\text{N}-\text{OH}$ forms oxime / with HCN forms cyanohydrin (Or correct chemical equation)</p> <p>(ii) Glucose gives stable pentaacetate with $(\text{CH}_3\text{CO})_2\text{O}$ (Or correct chemical equation)</p> <p>(b) Those which reduce Tollen's reagent/Fehling solution.</p> <p>(c)(i) D- stands for Configuration</p> <p>(+) stands for dextrorotatory nature of the molecule. OR</p> <p>(c) (ii)</p>  | <p>1</p> <p>1</p> <p>1</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>1</p> |
| | SECTION E | |
| 31 | <p>(a) (i) (I) Because Mn is in lower Oxidation state (+2) in MnO while in Mn_2O_7, Mn is in higher Oxidation state (+7).</p> <p>(II) Because of more number of unpaired electrons in iron than copper.</p> <p>(III) Greater stability of Mn in +2 Oxidation state is due to $3d^5$ configuration whereas Cr is already stable in +3 oxidation state due to stable t_{2g}^3 configuration.</p> <p>(ii) $2\text{Na}_2\text{CrO}_4 + 2\text{H}^+ \longrightarrow \text{Na}_2\text{Cr}_2\text{O}_7 + 2\text{Na}^+ + \text{H}_2\text{O}$</p> <p>$\text{Na}_2\text{Cr}_2\text{O}_7 + 2\text{KCl} \longrightarrow \text{K}_2\text{Cr}_2\text{O}_7 + 2\text{NaCl}$</p> | <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> |
| | OR | |
| 31 | <p>(b) (i) Because of their radioactive nature and ability to show wide range of oxidation states.</p> <p>(ii) Because the sum of ionisation enthalpies ($\Delta_i H_1 + \Delta_i H_2$) and sublimation enthalpies are irregular across 3d series.</p> <p>(iii) (I) $\text{Cr}_2\text{O}_7^{2-}$</p> | <p>1</p> <p>1</p> <p>$\frac{1}{2}$</p> |

| | | |
|----|--|-------------------------------------|
| | (II) Cerium / Ce (Or any other correct example) | ½ |
| | (iv) $K_2MnO_4 + MnO_2 + O_2$ | 1 |
| | (v) Fe^{2+} , Ti^{3+} | ½ + ½ |
| 32 | <p>(a) (i) (I)</p>  <p>(II)</p>  <p>(ii)</p>  <p>(iii) $C_6H_5COOH < HCOOH < O_2N-CH_2-COOH < CF_3-COOH$</p> | <p>1</p> <p>1</p> <p>1</p> <p>1</p> |
| | OR | |
| 32 | <p>(b) (i) (I)</p>  <p>(II)</p>  <p>(ii) (I) Because of the formation of salt where carboxyl group is deactivating and gets bonded with lewis acid (Anhydrous $AlCl_3$).</p> <p>(II) Because of more extensive association of carboxylic acid molecules through intermolecular hydrogen bonding./ Dimer formation takes place.</p> <p>(iii) On warming with freshly prepared ammoniacal solution of $AgNO_3$ (Tollens' reagent) propanal forms bright silver mirror whereas propanone does not. (or any other suitable test)</p> | <p>1</p> <p>1</p> <p>1</p> <p>1</p> |
| 33 | <p>(a)(i)</p> $E_{(cell)}^{\circ} = \frac{0.059}{n} \log K_c$ $E_{(cell)}^{\circ} = \frac{0.059}{2} \log(10^{15})$ | <p>½</p> <p>½</p> |

| | | |
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| | $E_{(\text{cell})}^{\circ} = \frac{0.059}{2} (15 \log 10) \Rightarrow E_{(\text{cell})}^{\circ} = \frac{0.059V}{2} \times 15$ $E_{(\text{cell})}^{\circ} = 0.0295 \times 15 = 0.4425 \text{ V}$ <p>Anode: $\text{Pb(s)} + \text{SO}_4^{2-}(\text{aq}) \rightarrow \text{PbSO}_4(\text{s}) + 2\text{e}^-$ Cathode: $\text{PbO}_2(\text{s}) + \text{SO}_4^{2-}(\text{aq}) + 4\text{H}^+(\text{aq}) + 2\text{e}^- \rightarrow \text{PbSO}_4(\text{s}) + 2\text{H}_2\text{O(l)}$</p> <p>(ii) Overall reaction $\text{Pb(s)} + \text{PbO}_2(\text{s}) + 2\text{H}_2\text{SO}_4(\text{aq}) \rightarrow 2\text{PbSO}_4(\text{s}) + 2\text{H}_2\text{O(l)}$</p> <p>(iii) 96500 C</p> | 1 $\frac{1}{2}$ $\frac{1}{2}$ 1 1 |
| | OR | |
| 33 | <p>(b)(i)</p> $\Lambda_m = \frac{\kappa}{c}$ $\Lambda_m = \frac{7.2 \times 10^{-5} \times 1000}{0.0024}$ $\Lambda_m = 30 \text{ Scm}^2 \text{mol}^{-1}$ $\alpha = \frac{\Lambda_m}{\Lambda_m^{\circ}}$ $\alpha = \frac{30}{390.5}$ $\alpha = 0.0768 \text{ or } 0.077$ <p>(b) (ii) $E_{(\text{Ag}^+/\text{Ag})} = E_{(\text{Ag}^+/\text{Ag})}^{\theta} - \frac{0.059}{1} \log \frac{[\text{Ag}]}{[\text{Ag}^+]}$</p> $E_{(\text{Ag}^+/\text{Ag})} = 0.80 - 0.059 \log \frac{1}{(0.01)}$ $E_{(\text{Ag}^+/\text{Ag})} = 0.80 - 0.059 \log 10^2$ $E_{(\text{Ag}^+/\text{Ag})} = 0.80 - 0.059 \times 2 \Rightarrow E_{(\text{Ag}^+/\text{Ag})} = 0.80 - 0.118$ $E_{(\text{Ag}^+/\text{Ag})} = 0.682 \text{ V}$ <p>(b)(iii)(I) NH_4Cl and ZnCl_2 (II) Aq NaOH solution/KOH solution</p> | $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ 1 $\frac{1}{2}$ $\frac{1}{2}$ |
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