

Marking Scheme
Strictly Confidential
 (For Internal and Restricted use only)
Senior Secondary School Examination, 2026 (XIIth)
SUBJECT NAME: - CHEMISTRY (043), (Q.P. CODE 56/3/1)

General Instructions: -

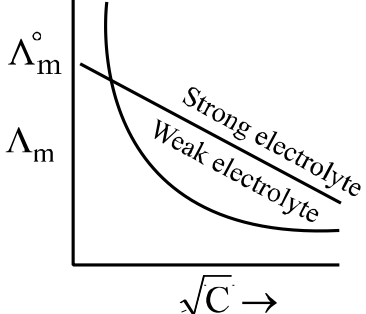
1	The CBSE has decided to introduce On Screen Marking (OSM) for the evaluation of Class XII answer Book with the 2026 Examination.
2	You are aware that evaluation is the most important process in the actual and correct assessment of the candidates. A small mistake in evaluation may lead to serious problems 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.

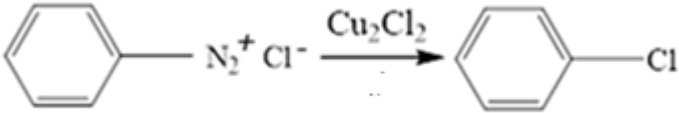
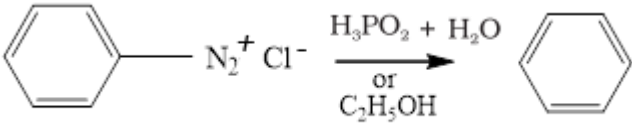
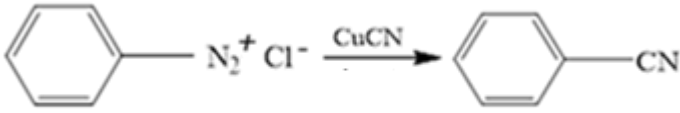
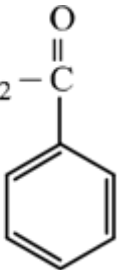
10	No marks to be deducted for the cumulative effect of an error. It should be penalized only once.
11	A full scale of marks _____ (example 0 to 80/70/60/50/40/30 marks as given in Question Paper) has to be used. Please do not hesitate to award full marks if the answer deserves it.
12	Every examiner 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.

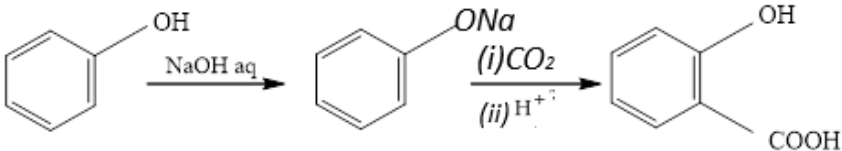
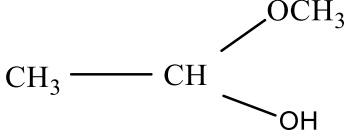
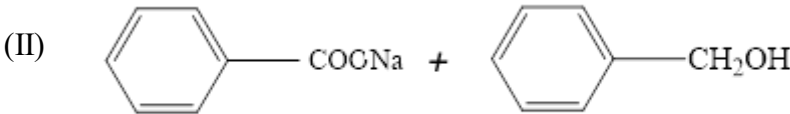
MARKING SCHEME
CHEMISTRY (Subject Code-043)
(PAPER CODE : 56/3/1) (26-03-43N)

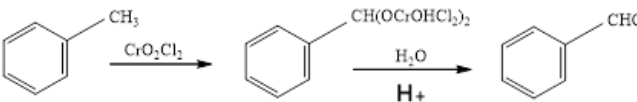
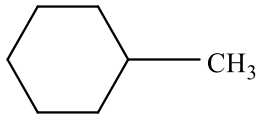
Q.No.	EXPECTED OUTCOMES/VALUE POINTS	Marks
	SECTION - A	
1.	(B)	1
2.	(D)	1
3.	(A)	1
4.	(C)	1
5.	(B)	1
6.	(B)	1
7.	(B)	1
8.	(A)	1
9.	(C)	1
10.	(D)	1
11.	(B)	1
12.	(D)	1
13.	(C)	1
14.	(D)	1
15.	(B)	1
16.	(B)	1
	SECTION - B	
17.	(a) $(\text{CH}_3)_3\text{CBr}$	1
	(b) $\begin{array}{c} \text{CH}_3 \\ \\ \text{CH}_3 - \text{CH} - \text{CH}_2 - \text{Br} \end{array}$	1
18.	Overall order = 5/2 No Because for an elementary reaction order and molecularity are equal, but molecularity can't be fractional.	$\frac{1}{2}$ $\frac{1}{2}$ 1

19.	Because KCl undergoes dissociation in water to give more particles mean higher b.p. Whereas methyl alcohol forms hydrogen bond with H ₂ O disrupting water-water H-bonding and lowering the b.p.	1+1
20.	<p>(a)(i) Dichloridobis(ethane-1, 2-diamine) platinum(IV) sulphate</p> <p>(ii) Ammonium tetrafluoridocobaltate (II)</p> <p style="text-align: center;">OR</p> <p>(b)(i) A ligand which has two different donor atoms and either of the two ligates in the complex. Ex. CN⁻, SCN⁻, NO₂⁻ (any one)</p> <p>(ii) Double Salts are made up of two or more stable compounds in a stoichiometric ratio. / In water, double salts completely dissociate into simple ions. Ex. FeSO₄·(NH₄)₂SO₄·6H₂O / K₂SO₄·Al₂(SO₄)₃·24H₂O (Or any other)</p>	<p>1</p> <p>1</p> <p>½</p> <p>½</p> <p>½</p> <p>½</p>
21.	<p>(a) Glucose on reaction with HI forms n-hexane which confirms the presence of a straight chain (or chemical equation).</p> <p>(b) Glucose on reaction with acetic anhydride gives stable glucose pentaacetate which confirms the presence of five -OH groups (or chemical equation).</p>	<p>1</p> <p>1</p>
	SECTION-C	
22.	$k = \frac{0.693}{t_{\frac{1}{2}}}$ $k = \frac{0.693}{1.5 \times 10^{10}} \text{ year}^{-1}$ $k = \frac{2.303}{t} \log \frac{[R]_0}{[R]}$ $t = \frac{2.303}{0.693} \times 1.5 \times 10^{10} \log \frac{100}{75}$ $t = \frac{2.303}{0.693} \times 1.5 \times 10^{10} [\log 4 - \log 3]$ $t = \frac{2.303 \times 1.5 \times 10^{10}}{0.693} \times [0.60 - 0.48] \text{ year}$ $t = 0.598 \times 10^{10} \text{ years OR } 6 \times 10^9 \text{ years}$	<p>½</p> <p>½</p> <p>1</p> <p>1</p>
23.	Limiting molar conductivity is equal to the sum of individual contributions of cation and anion.	1

	 <p>Because for weak electrolyte, on extrapolation, the curve runs parallel to the y-axis and does not intercept as strong electrolyte does.</p>	<p>1</p> <p>1</p>
24.	$\Delta T_f = K_f \cdot \frac{W_B}{M_B} \times \frac{1000}{W_A}$ $\Delta T_f = 1.86 \times \frac{31}{62} \times \frac{1000}{600}$ $\Delta T_f = 1.55K$ $T_f^o = T_f - 1.55K$ $T_f = 0^\circ C - 1.55C$ $T_f = -1.55^\circ C \quad \text{OR}$ $T_f = 273.15 - 1.55 = 271.6K$	<p>$\frac{1}{2}$</p> <p>1</p> <p>$\frac{1}{2}$</p> <p>1</p>
25.	<p>(a) (i) sp^3, dsp^2</p> <p>(ii) $[NiCl_4]^{2-}$: outer orbital complex</p> <p>$[Ni(CN)_4]^{2-}$: inner orbital complex</p> <p>(iii) $[NiCl_4]^{2-}$: Paramagnetic</p> <p>$[Ni(CN)_4]^{2-}$: Diamagnetic</p> <p style="text-align: center;">OR</p> <p>(b) (i) Haemoglobin, chlorophyll, vitamin B_{12}, Carboxypeptidase A, Carbonic anhydrase (any two)</p> <p>(ii) Formation of stable complexes by di or polydentate ligand with single metal atom/ ion.</p> <p>$[Pt(en)_2Cl_2]^{2-} / [Co(en)_3]^{3+}$ (or any other correct example)</p> <p>(iii) Because of low crystal field splitting energy or $\Delta_t < P$</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> <p>$\frac{1}{2} + \frac{1}{2}$</p> <p>$\frac{1}{2} + \frac{1}{2}$</p> <p>1</p>
26.	<p>(a) Because +R effect of chlorine stabilises the intermediate carbocation and hence activate the benzene ring at ortho and para positions.</p> <p>(b) Because the carbon – oxygen bond in phenols has a partial double bond character and is difficult to break being stronger than single bond.</p> <p>(c) Because chloroform in the presence of air and light forms poisonous gas phosgene.</p>	<p>1</p> <p>1</p> <p>1</p>

27.	<p>(a) </p> <p>(b) </p> <p>(c) </p>	<p>1</p> <p>1</p> <p>1</p>
28.	<p>A = CH₃CH₂CN</p> <p>B = $\text{C}_6\text{H}_5\text{C}(=\text{O})\text{CH}_2\text{CH}_3$</p> <p>C = C₆H₅COOH</p> <p>$\text{CH}_3\text{CH}_2\text{CN} + \text{C}_6\text{H}_5\text{MgBr} \xrightarrow[\text{H}^+]{\text{H}_2\text{O}} \text{CH}_3\text{CH}_2\text{C}(=\text{O})\text{C}_6\text{H}_5$</p> 	<p>1</p> <p>½</p> <p>½</p> <p>1</p>
SECTION D		
29.	<p>(a) α - amino acids</p> <p>Nucleotides</p> <p>Fibrous protein :- When the polypeptide chains run parallel and are held together by hydrogen and disulphide bonds, then fibre-like structure is formed whereas Globular protein is the polypeptide which coil around to give a spherical Shape. (Or any other correct difference)</p> <p>(b) (i)Thymine base, a pentose sugar (2-deoxyribose) and phosphoric acid.</p> <p style="text-align: center;">OR</p> <p>(b) (ii)DNA is double stranded whereas RNA is single stranded. (or any other)</p> <p>(c) Fat soluble : Vitamin. A/D/E/K</p> <p>Water soluble : Vitamin. B /C</p>	<p>½</p> <p>½</p> <p>1</p> <p>1</p> <p>1</p> <p>½</p> <p>½</p>

30.	<p>(a) (i) CrO_3/PCC (ii) Acidified KMnO_4 (or any other suitable reagent)</p> <p>(b)</p>  <p>(c) (i) Because of the absence of α-hydrogen atom.</p> <p style="text-align: center;">OR</p> <p>(ii) $(\text{CH}_3)_3\text{C}-\text{I} + \text{C}_2\text{H}_5\text{OH}$</p>	<p>1+1</p> <p>1</p> <p>1</p> <p>$\frac{1}{2} + \frac{1}{2}$</p>
	SECTION-E	
31.	<p>(a) (i) (I) Fe, Because of more unpaired electrons than Cu.</p> <p>(II) Ti^{3+}, Because of the presence of one unpaired electron in 3d-orbital.</p> <p>(III) Zn, Because of stable configuration $3d^{10}$ in +2 state.</p> <p>(ii) (I) $5\text{Fe}^{2+} + \text{MnO}_4^- + 8\text{H}^+ \rightarrow \text{Mn}^{2+} + 4\text{H}_2\text{O} + 5\text{Fe}^{3+}$</p> <p>(II) $10\text{I}^- + 2\text{MnO}_4^- + 16\text{H}^+ \rightarrow 2\text{Mn}^{2+} + 8\text{H}_2\text{O} + 5\text{I}_2$</p> <p style="text-align: center;">OR</p> <p>(b) (i) $2\text{MnO}_2 + 4\text{KOH} + \text{O}_2 \rightarrow 2\text{K}_2\text{MnO}_4 + 2\text{H}_2\text{O}$</p> <p>$\text{MnO}_4^{2-} \xrightarrow{\text{electrolytic oxidation in alkaline solution}} \text{MnO}_4^-$</p> <p>(A): MnO_2, (B): K_2MnO_4, (C): KMnO_4</p> <p>(ii) $3\text{MnO}_4^{2-} + 4\text{H}^+ \rightarrow 2\text{MnO}_4^- + \text{MnO}_2 + 2\text{H}_2\text{O}$</p> <p>On standing compound (B) changes to permanganate ion in acid solution.</p> <p>Disproportionation reaction.</p>	<p>$\frac{1}{2} + \frac{1}{2}$</p> <p>$\frac{1}{2} + \frac{1}{2}$</p> <p>$\frac{1}{2} + \frac{1}{2}$</p> <p>1</p> <p>1</p> <p>OR</p> <p>1</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2} \times 3$</p> <p>1</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p>
32.	<p>(a) (i) (I)</p>  <p>(II)</p> 	<p>1</p> <p>$\frac{1}{2} + \frac{1}{2}$</p>

	<p>(III) $(\text{CH}_3\text{CO})_2\text{O}$</p> <p>(ii) On heating with $\text{NaOH} + \text{I}_2$, ethanal gives yellow ppt. of CHI_3 whereas propanal does not.</p> <p>(iii) PCC</p> <p style="text-align: center;">OR</p> <p>(b) (i) $\begin{array}{c} \text{CH}_3 - \text{C} = \text{NNHCONH}_2 \\ \\ \text{CH}_3 \end{array}$</p> <p>(ii) Because of electron withdrawing nature of carbonyl group / Because of resonance stabilisation of its conjugate base.</p> <p>(iii) $(\text{CH}_3)_3\text{C} - \text{C}(=\text{O}) - \text{CH}_3 < \text{CH}_3\text{COCH}_3 < \text{CH}_3\text{CHO}$</p> <p>(iv) </p> <p>(v) </p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>
33.	<p>(a) (i) $E_{\text{Zn}^{2+}/\text{Zn}} = E^0_{\text{Zn}^{2+}/\text{Zn}} - \frac{0.059}{2} \log \frac{1}{[\text{Zn}^{2+}]}$</p> <p>$E_{\text{Zn}^{2+}/\text{Zn}} = -0.76\text{V} - \frac{0.059}{2} \log \frac{1}{[0.01]}$</p> <p>$E_{\text{Zn}^{2+}/\text{Zn}} = \left(-0.76 - \frac{0.059}{2} \times 2 \right) \text{V}$</p> <p>$= -0.819\text{V}$</p> <p>(ii)</p> <p>Anode: $\text{Zn(s)} \longrightarrow \text{Zn}^{2+} + 2\text{e}^-$</p> <p>Cathode: $\text{MnO}_2 + \text{NH}_4^+ + \text{e}^- \longrightarrow \text{MnO(OH)} + \text{NH}_3$</p> <p>Overall $\rightarrow \text{Zn} + 2\text{MnO}_2 + 2\text{NH}_4^+ \rightarrow \text{Zn}^{2+} + 2\text{MnO(OH)} + 2\text{NH}_3$</p> <p>(iii) Because E_{cell}^0 is a constant value, whereas E_{cell} becomes zero at equilibrium.</p> <p style="text-align: center;">OR</p> <p>(b) (i) $\Lambda_{\text{m}}^0 = \lambda_{\text{CH}_3\text{COO}^-}^0 + \lambda_{\text{H}^+}^0$</p> <p>$= (349.6 + 40.9) \text{ Scm}^2 \text{ mol}^{-1}$</p> <p>$= 390.5 \text{ Scm}^2 \text{ mol}^{-1}$</p>	<p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>1</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>1</p> <p>1</p> <p>$\frac{1}{2}$</p>

	$\Lambda_m = \frac{K}{C} \times 1000 \text{ Scm}^2 \text{ mol}^{-1}$ $= \frac{3.905 \times 10^{-5}}{0.001} \times 1000$ $= 39.05 \text{ Scm}^2 \text{ mol}^{-1}$ $\alpha = \frac{\Lambda_m}{\Lambda_m^0}$ $= \frac{39.05}{390.5} = 0.1$ <p>(ii) (I) Because overall reaction does not contain any ion whose concentration can change during its life time.</p> <p>(II) Because salt bridge completes the circuit / maintains electrical neutrality.</p>	<p>1</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>$\frac{1}{2}$</p> <p>1</p> <p>1</p>
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