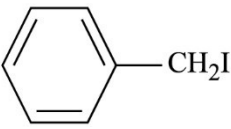
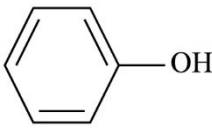
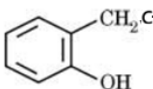


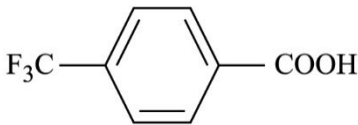
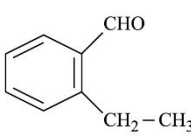
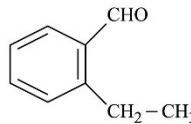
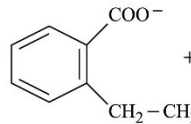
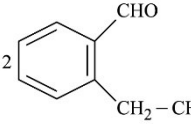
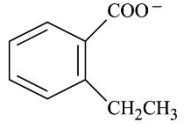
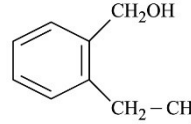
Marking Scheme Strictly Confidential (For Internal and Restricted use only) Senior Secondary Supplementary School Examination, 2026 (XIIth) SUBJECT NAME: - Chemistry (Q.P. CODE 043/56-7-3)	
<u>General Instructions: -</u>	
1	You are aware that evaluation is the most important process in the actual and 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.
2	“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.”
3	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.
4	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.
5	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.
6	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.
7	If a question has parts, please award marks on the right-hand side for each part. Marks awarded for different parts of the question should then be totaled up and written in the left-hand margin and encircled. This may be followed strictly.
8	If a question does not have any parts, marks must be awarded in the left-hand margin and encircled. This may also be followed strictly.
9	If a student has attempted an extra question, answer of the question deserving more marks should be retained and the other answer scored out with a note “Extra Question” .

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 :- ● Leaving answer or part thereof unassessed in an answer book. ● Giving more marks for an answer than assigned to it. ● Wrong totaling of marks awarded on an answer. ● Wrong transfer of marks from the inside pages of the answer book to the title page. ● Wrong question wise totaling on the title page. ● Wrong totaling of marks of the two columns on the title page. ● Wrong grand total. ● Marks in words and figures not tallying/not same. ● Wrong transfer of marks from the answer book to online award list. ● 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	Any unassessed portion, non-carrying over of marks to the title page, or totaling error detected by the candidate shall damage the prestige of all the personnel engaged in the evaluation work as also of the Board. Hence, in order to uphold the prestige of all concerned, it is again reiterated that the instructions be followed meticulously and judiciously.
16	The Examiners should acquaint themselves with the guidelines given in the “ Guidelines for Spot Evaluation ” before starting the actual evaluation.
17	Every Examiner shall also ensure that all the answers are evaluated, marks carried over to the title page, correctly totaled and written in figures and words.
18	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.

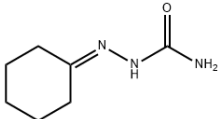
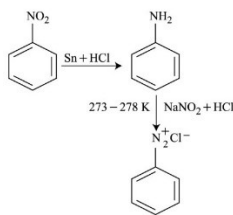
MARKING SCHEME
CHEMISTRY (Subject Code - 043)
(PAPER CODE: 56/7/3)

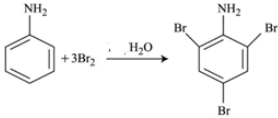
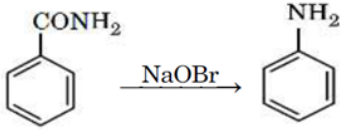
Q.No.	EXPECTED OUTCOMES/VALUE POINTS	Marks
	SECTION - A	
1.	(D) / a(ii), b (iv), c (i), d (iii)	1
2.	(C) / -COOH and -NH ₂	1
3.	(D) / $3^0 > 2^0 > 1^0$	1
4.	(B) / are ionisable	1
5.	(D) / H ₂ is anode and Cu is cathode	1
6.	(D) / $\Delta_r G^\ominus = -nF E_{(cell)}^\ominus$	1
7.	(C) / $E_{ext} > E_{cell}$	1
8.	(C) / Picric acid	1
9.	(A) / (i) and (ii) / (i)  (ii) 	1
10.	(C) / 6F	1
11.	(C) / Manganese	1
12.	(B) / Reaction of Nitrobenzene with hydrogen gas in the presence of finely divided Nickel.	1
13.	(A) / Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of the Assertion (A)	1
14.	(D) / Assertion is false, Reason is true	1
15.	(A) / Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of the Assertion (A)	1
16.	(C) / Assertion is true but reason is false.	1

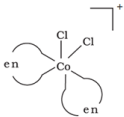
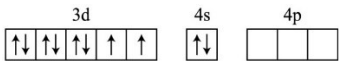
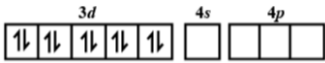
SECTION - B		
17.(a)	(i) Because they have similar radii due to lanthanoid contraction. / Due to lanthanoid contraction.	1
	(ii) $\text{Mn}^{2+}(3d^5)$ is more stable than $\text{Mn}^{3+}(3d^4)$, so Mn^{3+} can easily be reduced to Mn^{2+} whereas $\text{Fe}^{3+}(3d^5)$ is more stable than $\text{Fe}^{2+}(3d^6)$ / Much larger third ionisation energy of Mn (Where the required change is d^5 to d^4)	1
OR		
17.(b)	(i) Sc, because after loosing 3 electrons it attains noble gas configuration. (ii) Due to the absence of unpaired electrons in $\text{Cu}^+ (3d^{10})$, no d-d transition is possible, whereas due to the presence of unpaired electron in $\text{Cu}^{2+} (3d^9)$, d-d transition take place, hence it is coloured.	$\frac{1}{2} + \frac{1}{2}$ 1
18.	(i) $\text{Rate} = k [A]^2$ Concentration of A is increased to 3 times $\text{Rate} = k [3A]^2$ = 9 times Thus the rate increases 9 times. (ii) $\text{Rate} = k [A]^2$ Concentration of A is reduced to half $\text{Rate} = k [A/2]^2$ = 1/4 times Thus the rate is reduced to 1/4 times.	1 1
19.	Anode: $\text{Pb(s)} + \text{SO}_4^{2-}(\text{aq}) \rightarrow \text{PbSO}_4(\text{s}) + 2\text{e}^-$ Cathode: $\text{PbO}_2(\text{s}) + \text{SO}_4^{2-}(\text{aq}) + 4\text{H}^+(\text{aq}) + 2\text{e}^- \rightarrow \text{PbSO}_4(\text{s}) + 2\text{H}_2\text{O}(\text{l})$	1 1
20.	$\frac{p_1^\circ - p_1}{p_1^\circ} = x_2 = \frac{w_2 \times M_1}{M_2 \times w_1}$ $\frac{32 - 31.84}{32} = \frac{10 \times 18}{M_2 \times 200}$ $\frac{0.16}{32} = \frac{10 \times 18}{M_2 \times 200}$ $M_2 = 180 \text{ g/mol}$	$\frac{1}{2}$ $\frac{1}{2}$ 1
21.	(a)  (b) 	1 1

	SECTION - C	
22.(a)	(i) Propanal on treatment with Tollen's reagent gives silver mirror. Propanone does not react with Tollen's reagent. (ii)  is a stronger acid because of strong -I effect of -CF₃. (iii) $\text{CH}_3\text{CH}_2\text{CH}_2\text{COOC}_2\text{H}_5 \xrightleftharpoons{\text{NaOH}} \text{CH}_3\text{CH}_2\text{CH}_2\text{COONa} + \text{C}_2\text{H}_5\text{OH}$ $\xrightarrow{\text{H}_3\text{O}^+} \text{CH}_3\text{CH}_2\text{CH}_2\text{COOH}.$	1 $\frac{1}{2} + \frac{1}{2}$ 1
	OR	
22.(b)	 / 2-Ethyl benzaldehyde  + 2[Ag(NH₃)₂]⁺ + 3OH⁻ →  + 2Ag + 4NH₃ + 2H₂O 2  $\xrightarrow{\text{OH}^-}$  + 	1 1 1
23.	(a) 2, 4, 6 – Trinitrophenol > 4-Nitrophenol > Phenol (b) Because of hydrogen bonding between alcohol and water (c) Pyridinium chlorochromate / PCC	1 1 1
24.	$\Delta T_f = i \times K_f \times \frac{W_2}{M_2} \times \frac{1000}{W_1}$ i=3 $\Delta T_f = 3 \times 1.86 \times \frac{2}{142} \times \frac{1000}{50}$ $\Delta T_f = 1.57 \text{ K}$ $\Delta T_f = T_f^0 - T_f = 273.15 - 1.57 / 273.0 - 1.57$ $= 271.58 \text{ K} / 271.43 \text{ K}$	$\frac{1}{2}$ $\frac{1}{2}$ 1 1
25.	(a)	

	<table><tr><th>DNA</th><th>RNA</th></tr><tr><td> - It has a deoxyribose sugar and bases present are A, G, C, T </td><td>It has a ribose sugar and bases present are A, G, C, U</td></tr><tr><td> - It is double stranded. </td><td>It is single stranded.</td></tr></table> (or any other) (b) Amylopectin, it is insoluble in water. (c) Hydrogen and disulphide bonds.	DNA	RNA	It has a deoxyribose sugar and bases present are A, G, C, T	It has a ribose sugar and bases present are A, G, C, U	It is double stranded.	It is single stranded.	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2} + \frac{1}{2}$ $\frac{1}{2} + \frac{1}{2}$
DNA	RNA							
It has a deoxyribose sugar and bases present are A, G, C, T	It has a ribose sugar and bases present are A, G, C, U							
It is double stranded.	It is single stranded.							
26.	(a) Due to resonance -C-X bond has partial double bond character, thus cleavage becomes difficult in haloarenes. In haloalkane, the carbon atom attached to halogen is sp³ hybridised while in case of haloarene, the carbon atom attached to halogen is sp²-hybridised. (or any other correct reasons) (b) $R-X + NaI \xrightarrow{\text{Dry acetone}} R-I + NaX$	1 1 1						
27.	$\Lambda_m = \frac{k \times 1000}{\text{Concentration}}$ $= \frac{5.25 \times 10^{-5} \times 1000}{2.5 \times 10^{-4}}$ $= 210 \text{ S cm}^2 \text{ mol}^{-1}$ $\Lambda_m^o = \lambda_{H^+}^o + \lambda_{HCOO^-}^o$ $= 349.5 + 50.5$ $= 400 \text{ S cm}^2 \text{ mol}^{-1}$ $\alpha = \frac{\Lambda_m}{\Lambda_m^o}$ $= \frac{210}{400}$ $= 0.525 \text{ or } 52.5\%$	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$						
28.	(a) The native protein that lost its biological activity when subjected to physical or chemical change / the secondary and tertiary structures are destroyed while primary structure remains intact. Curdling of milk (any other correct example). (b) $\begin{array}{c} \text{CHO} \\ \\ (\text{CHOH})_4 \\ \\ \text{CH}_2\text{OH} \end{array} + \text{HCN} \longrightarrow \begin{array}{c} \text{CH} \begin{array}{l} \nearrow \text{CN} \\ \searrow \text{OH} \end{array} \\ \\ (\text{CHOH})_4 \\ \\ \text{CH}_2\text{OH} \end{array}$ (c) Scurvy	$\frac{1}{2}$ $\frac{1}{2}$ 1 1						

	SECTION - D	
29.	(a) Aldol condensation : Cyclohexanone 2 – Methylpentanal Cannizzaro reaction : Benzaldehyde Methanal	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$
	(b) (i) Butanone < Propanone < Propanal < Ethanal OR	1
	(b) (ii) 	1
	(c) Due to resonance stabilisation of conjugate base.	1
30.	(a) (i) Because electrons are added to inner d-orbitals and effective nuclear charge does not change appreciably / Increase in effective nuclear charge is compensated by shielding effect / Due to Lanthanoid contraction (ii) Due to the participation of ns and (n-1) d electrons.	1 1
	(b) (i) Because Zn has no unpaired electron in 3d orbital in ground state as well as in its common oxidation states. OR	1
	(b) (ii) Due to involvement of greater number of electrons from (n-1)d in addition to the ns electrons in the interatomic metallic bonding. / Because of large number of unpaired electrons in their atoms they have stronger interatomic interaction and hence stronger bonding between atoms.	1
	(c) Increase in effective nuclear charge is compensated by shielding effect.	1
	SECTION - E	
31.(a)	(i) (I) In aniline lone pair on N atom is delocalised due to resonance thus electron density decreases making it less available for protonation. Hence it is a weak base. In CH ₃ NH ₂ , +I effect of -CH ₃ increases electron density on N-atom. (II) (C ₂ H ₅) ₃ N > (C ₂ H ₅) ₂ NH > C ₂ H ₅ NH ₂ > NH ₃ (III) C ₆ H ₅ SO ₂ Cl / Benzene Sulphonyl chloride It is used for distinction of primary, secondary and tertiary amines. (or any other)	1 1 $\frac{1}{2}$ $\frac{1}{2}$
	(ii) (I) 	1
	(II)	

	$\text{CH}_3\text{I} \xrightarrow{\text{KCN}} \text{CH}_3\text{CN}$ $\downarrow \text{Na(Hg)/alcohol}$ $\text{CH}_3\text{CH}_2\text{NH}_2$	1
	OR	
(b)	(i)(I) $\text{CH}_3\text{NH}_2 + \text{C}_6\text{H}_5\text{COCl} \rightarrow \text{CH}_3\text{NHCOC}_6\text{H}_5$ (II)  (III)  (ii)(I) $\text{R}-\text{NH}_2 + \text{CHCl}_3 + 3\text{KOH} \xrightarrow{\text{heat}} \text{R}-\text{NC} + 3\text{KCl} + 3\text{H}_2\text{O}$ (II) Because aryl halides do not undergo nucleophilic substitution reaction with the anion formed by phthalamide ion.	1 1 1 1 1
32.(a)	(i) $k = \frac{2.303}{t} \log \frac{[\text{R}]_0}{[\text{R}]}$ $k = \frac{2.303}{10} \log \frac{[\text{R}]_0}{\frac{80}{100}[\text{R}]_0}$ $= \frac{2.303}{10} \log \frac{100}{80}$ $= \frac{2.303}{10} \log 5 - \log 4$ $= \frac{2.303}{10} (0.7 - 0.6)$ $= 0.02303$ For 80% completion $t = \frac{2.303}{k} \log \frac{[\text{R}]_0}{\frac{20}{100}[\text{R}]_0}$ $t = \frac{2.303}{0.023} \log 5$ $t = \frac{2.303}{0.023} \times 0.7$ $t = 70 \text{ min}$ (or any other correct method) (ii) (I) First order reaction (II) -k	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ 1 1

		1
	OR	
32.(b)	(i) $k = \frac{2.303}{t} \log \frac{[R]_0}{[R]}$ $t_{3/4} = \frac{2.303}{k} \log \frac{[R]_0}{\left(1 - \frac{3}{4}\right)R_0}$ $= \frac{2.303}{k} \log 4$ $t_{1/2} = \frac{2.303}{k} \log 2$ $\therefore \frac{t_{3/4}}{t_{1/2}} = \frac{2 \log 2}{\log 2} = 2$ (ii)(I) When a sequence of elementary reactions gives us the products, the reactions are called complex reactions. (II) Hydrolysis of cane sugar (sucrose) or hydrolysis of ester / Chemical equation	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ 1 1 1
33.(a)	(i) (I) In $[\text{Fe}(\text{CN})_6]^{3-}$ CN^- is a strong field ligand, $3d^5$ electrons pair up and the hybridisation is d^2sp^3, forming an inner orbital complex. Whereas in $[\text{FeF}_6]^{3-}$, F^- is a weak field ligand, $3d^5$ electrons do not pair up and the hybridisation is sp^3d^2, forming an outer orbital complex. (II) $[\text{Ni}(\text{NH}_3)_6] \text{Cl}_2$ (ii) In $[\text{Ni}(\text{H}_2\text{O})_6]^{2+}$, configuration is $3d^8$, H_2O is a weak field ligand thus two electrons do not pair up leading to d-d transition. Hence it is coloured. Whereas in $[\text{Ni}(\text{CN})_4]^{2-}$, CN^- is a strong field ligand thus the two unpaired electrons pair up, due to which no d-d transition take place and hence it is colourless	1 1 1 1 1
	OR	
33.(b)	(i)(I) Dicyanidosilver(I) diammineargentate(I) / diamminesilver(I) dicyanidoargentate(I) (II) Coordination number of Fe is 6 Coordination number of Cr is 6. (III)  (ii) $[\text{Ni}(\text{CO})_4]$ $\text{Ni}^{2+} = 3d^8 4s^2$   CO will pair up $3d$ unpaired electrons in d-orbital for hybridization. Therefore Hybridization is sp^3 Magnetic behaviour : Diamagnetic	1 $\frac{1}{2}$ $\frac{1}{2}$ 1 $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$

	- o 0 o -	
--	-----------	--