

Marking Scheme Strictly Confidential (For Internal and Restricted use only) Senior Secondary Supplementary School Examination, 2026 (XIIth) SUBJECT NAME: - CHEMISTRY (Visually Impaired) (Q.P. CODE : - 043(B)–56(B)/7/S	
<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 (V.I.) (Subject Code – 043(B))
(PAPER CODE: 56(B)/7(S))

Q.No.	EXPECTED OUTCOMES/VALUE POINTS	Marks
	SECTION – A	1
1.	A	1
2.	B	1
3.	A	1
4.	C	1
5.	B	1
6.	D	1
7.	B	1
8.	D	1
9.	C	1
10.	B	1
11.	B	1
12.	C	1
13.	B	1
14.	C	1
15.	A	1
16.	A	1
	SECTION – B	
17. (a)	- The external pressure applied on solution side to stop the movement of solvent across the semipermeable membrane. 1M KCl, because it undergoes dissociation to give more number of particles.	1 ½ ½
	OR	
(b)	(i) Because of same composition in liquid and vapour phase. (ii) Because with increase in temperature, K_H increases and solubility of oxygen gas decreases.	1 1
18.	$t = \frac{2.303}{K} \log \frac{[R]_o}{[R]}$ $t_{99\%} = \frac{2.303}{K} \log \frac{100}{1}$ $t_{90\%} = \frac{2.303}{K} \log \frac{100}{10}$ $\therefore \frac{t_{99\%}}{t_{90\%}} = \frac{2 \log 10}{\log 10} = 2$ $t_{99\%} = 2 t_{90\%}$	½ ½ ½ ½ ½

19.	- A ligand having two donor atoms to bind with metal ion is called di-dentate ligand. - ex. en, $C_2O_4^{2-}$ (Any one) - A ligand which has two different donor atoms and either of the two ligates in the complex is known as ambidentate ligand. Ex. NO_2^-, SCN^- (Any one)	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$												
20.	<table><tr><th colspan="2">S_N^1</th><th colspan="2">S_N^2</th></tr><tr><td>(1)</td><td>Rate depends upon one reactant</td><td>(1)</td><td>Rate depends upon two reactants</td></tr><tr><td>(2)</td><td>Retention of configuration</td><td>(2)</td><td>Inversion of configuration</td></tr></table> (or any other)	S_N^1		S_N^2		(1)	Rate depends upon one reactant	(1)	Rate depends upon two reactants	(2)	Retention of configuration	(2)	Inversion of configuration	1 1
S_N^1		S_N^2												
(1)	Rate depends upon one reactant	(1)	Rate depends upon two reactants											
(2)	Retention of configuration	(2)	Inversion of configuration											
21.	- Amino acids which are not synthesized in body and are required in our diet. - Because of Zwitter ionic nature.	1 1												
SECTION – C														
22.	$\Delta T_f = iK_f m = iK_f \times \frac{W_B}{M_B} \times \frac{1000}{W_A}$ $2.94 = i \times 4.9 \text{ K kgmol}^{-1} \times \frac{5\text{g}}{122 \text{ gmol}^{-1}} \times \frac{1000}{35 \text{ kg}}$ $i = \frac{2.94 \times 122 \times 35}{5 \times 1000 \times 4.9} = 0.512$ $\% \text{ Association} = \frac{0.512}{1} = 0.976 \text{ or } 97.6\%$	$\frac{1}{2}$ 1 $\frac{1}{2}$ 1												
23.	(a) - A Galvanic cell used to convert energy of combustion of fuel directly to electricity H_2-O_2 fuel cell. (i) High efficiency (ii) Pollution free (b) In the primary batteries, the reaction occurs only once and after use over a period of time battery becomes dead and cannot be used again while secondary battery after use can be recharged and can be used again.	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}+\frac{1}{2}$ 1												
24.	(i) $t_{\frac{1}{2}} = \frac{0.693}{k}$ $= \frac{0.693}{2.31 \times 10^{-6}} = 3 \times 10^5 \text{ s}$ (ii) It lowers down the E_a . (iii) Due to increase in number of effective collisions. / Increasing the temperature of a reactant increases the fraction of molecules, which collide with energies greater than E_a .	$\frac{1}{2}$ $\frac{1}{2}$ 1 1												
25.(a)	The energy used to split the degenerate d-orbitals into two sets t_{2g} and e_g , (i) $t_{2g}^3 e_g^1$ (ii) $t_{2g}^4 e_g^0$ OR	1 1+1												

(b)	(i) sp^3 , Paramagnetic	$\frac{1}{2} + \frac{1}{2}$
	(ii) d^2sp^3 , Diamagnetic	$\frac{1}{2} + \frac{1}{2}$
	(iii) sp^3d^2 , Paramagnetic	$\frac{1}{2} + \frac{1}{2}$
26.	(a)(i) Stereo isomers which related to each other as Non-superimposable mirror images and differ in rotation of plane polarised light	1
	(ii) A mixture which contains equal amounts of dextro and laevorotatory isomers.	1
	(b) Chiral molecules are optically active whereas achiral molecules are optically inactive. (Or any other)	1
27.	(a) When aldehydes or ketones having α -hydrogen atom react in the presence of dilute base, β -hydroxyaldehydes or ketones are formed.	1
	(b) When acid halide is hydrogenated in the presence of Pd-BaSO ₄ , it gives aldehydes.	1
	(c) When aldehydes or ketones having $\left[\text{CH}_3 - \underset{\text{O}}{\underset{\parallel}{\text{C}}} - \text{group} \right]$ is heated with NaOH and X ₂ (Cl ₂ , Br ₂ , I ₂), it forms haloform (CHX ₃) (or chemical equation in each case)	1
28.	(a) 2,4,6-Tribromoaniline is formed	1
	(b) Methyl amine is formed	1
	(c) Phenol is formed (or chemical equation in each case)	1
	SECTION – D	
29.	(a) (i) Acidified KMnO ₄	1
	(ii) CrO ₃	1
	(b) (i) When alkylhalide is treated with sodium alkoxide, ether is formed or equation OR I Diethylether / Ethoxy ethane II Ethene	1
	(c) Because of weak intermolecular forces in ethers	$\frac{1}{2} + \frac{1}{2}$
30.	(a) • Glucose with HI gives n-hexane	1
	• Glucose on reaction with H ₂ N–OH forms oxime/or with HCN forms cyanohydrin.	1
	(b) (i) Saccharides which on hydrolysis give large number of monosaccharides OR	1
	(b) (ii) • In plants as starch,	$\frac{1}{2}$
	• In animals as glycogen	$\frac{1}{2}$
	(c) The linkage which joins two monosaccharides through oxygen atom.	1

SECTION – E																			
31. (a)	(i) Transition elements are those which have incomplete d-orbital in their ground state or in oxidation state	1																	
	• Due to involvement of greater number of electrons from (n-1)d in addition to ns electrons resulting in strong interatomic metallic bonding.	1																	
	• Due to d-d transition.	1																	
	(ii) The steady decrease in atomic radii with increase in atomic number. Consequences : • 4d and 5d series elements have almost similar radii • Difficulty in their separation	1 ½+½																	
OR																			
(b)	(i) (I) Mn, due to participation of both 3d ⁵ and 4s ² electrons.	½+½																	
	(II) Sc, due to absence of unpaired electron.	½+½																	
	(III) Cr ²⁺ , as Cr ³⁺ is highly stable due to t _{2g} ³ configuration.	½+½																	
	(ii)	1+1																	
	<table><tr><th colspan="2">Lanthanoids</th><th colspan="2">Actinoids</th></tr><tr><td>(1)</td><td>Besides the common oxidation state of +3, they show +2 and +4 in certain elements</td><td>(1)</td><td>Besides common oxidation state of +3, they show +4, +5, +6 and +7 in certain elements</td></tr><tr><td>(2)</td><td>Except Pm, they are non-radioactive</td><td>(2)</td><td>All the actinoids are radioactive</td></tr><tr><td>(3)</td><td>Oxides and hydroxides of lanthanoids are less basic</td><td>(3)</td><td>Oxides and hydroxides of actinoids are more basic</td></tr></table>		Lanthanoids		Actinoids		(1)	Besides the common oxidation state of +3, they show +2 and +4 in certain elements	(1)	Besides common oxidation state of +3, they show +4, +5, +6 and +7 in certain elements	(2)	Except Pm, they are non-radioactive	(2)	All the actinoids are radioactive	(3)	Oxides and hydroxides of lanthanoids are less basic	(3)	Oxides and hydroxides of actinoids are more basic	
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	(3)	Oxides and hydroxides of lanthanoids are less basic	(3)	Oxides and hydroxides of actinoids are more basic															
	(Any two) (or any other)																		
32.(A)	(i) (I) Because oxidation involves cleavage of C-H bond in aldehydes which is easier than cleavage of strong C-C bond of Ketones.	1																	
	(II) Because -ve charge is spread over two more electronegative atoms.	1																	
	(III) Because of the absence of α-Hydrogen atom.	1																	
	(ii) (I) On heating with Tollens reagent ethanal forms Ag mirror. Whereas propanone does not.	1																	
	(II) On adding NaHCO ₃ , Benzoic acid gives effervescence of CO ₂ gas. Whereas benzaldehyde does not.	1																	
	(or any other suitable test)																		
	OR																		
(b)	(i) Introduction of acetyl group on alcohol/phenols/amines by CH ₃ COCl/Pyridine or (CH ₃ CO) ₂ O.	1																	
	(ii) When Sodium salt of carboxylic acid is heated with soda lime alkane is formed with the loss of carboxyl group.	1																	
	(iii) Cannizzaro reaction : When aldehydes with no α-hydrogen atom is heated in presence of Conc. NaOH (base). Disproportionation occurs to give alcohol and carboxylate.	1																	
	(iv) When carboxylic acid is treated with X ₂ /Red P. (Cl ₂ , Br ₂), α-halo carboxylic acid is formed.	1																	
	(v) When aldehydes or ketones are treated with zinc amalgam and conc. HCl carboxyl group is reduced to CH ₂ group forming Hydrocarbon.	1																	

	(or chemical equation in each case)	
33.(a)	(i) (I) Conductivity is the conductance observed for unit volume of substance placed between platinum electrodes of unit Area of cross section and separated by unit length.	1
	(II) Conductivity observed in 1M solution.	1
	(III) Molar conductivity when concentration approaches zero.	1
	(ii) $\Delta G^0 = -nFE^0_{\text{cell}}$	$\frac{1}{2}$
	$= -2 \times 96500 \times 1.1$ $= 212300 \text{ J mol}^{-1} = 212.3 \text{ kJ mol}^{-1}$	$\frac{1}{2}$ 1
	OR	
(b)	(i) $E_{(\text{cell})} = E^0_{(\text{cell})} - \frac{0.059}{n} \log \frac{[\text{Cu}^{2+}]}{[\text{Mg}^{2+}]}$	1
	$= 2.71 - \frac{0.059}{2} \log \frac{[0.001\text{M}]}{[0.01\text{M}]}$	1
	$= 2.71 - \frac{0.059}{2} \log [10^{-1}]$	1
	$= 2.71 + 0.0295$ $= 2.7395 \text{ V}$	
	(ii) (I) The slow oxidation of metal in the presence of air, water and acid. / The slow oxidation of metal in the presence of moist air.	1 1
	(II) The conductance of electricity by ions present the solutions.	
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