

**Marking Scheme
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Senior Secondary School Supplementary Examination, July-2024

SUBJECT NAME: CHEMISTRY

SUBJECT CODE:043

PAPER CODE: 56(B)/S

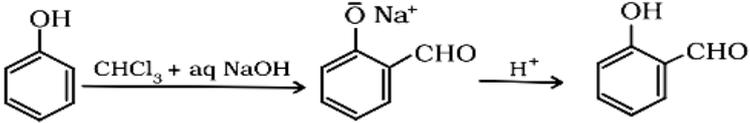
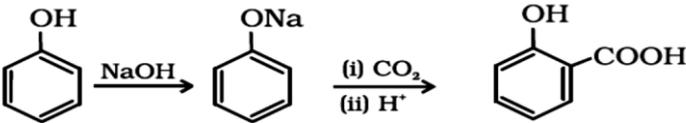
General Instructions: -

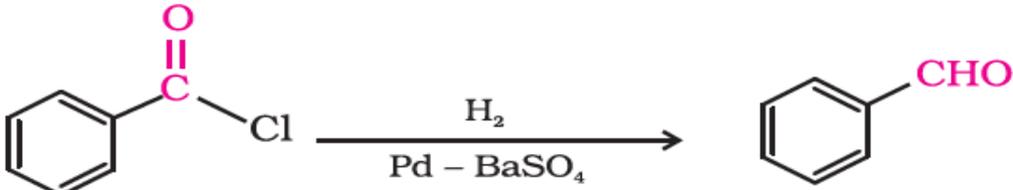
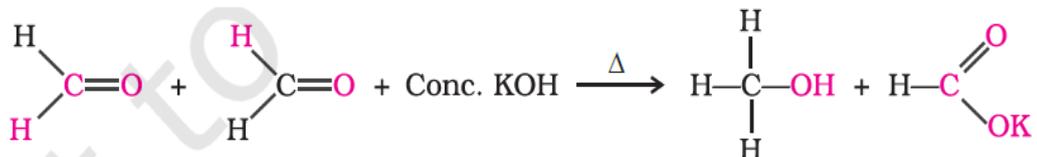
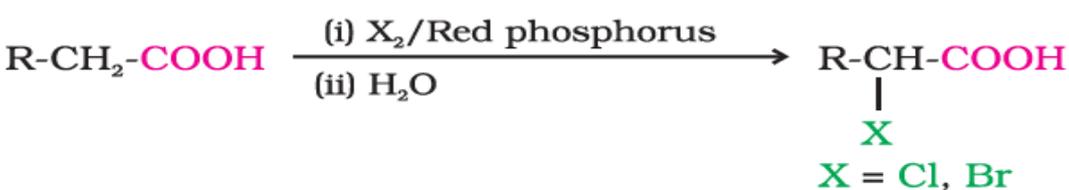
1	You are aware that evaluation is the most important process in the actual and correct assessment of the candidates. A small mistake in evaluation may lead to serious problems which may affect the future of the candidates, education system and teaching profession. To avoid mistakes, it is requested 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 News Paper/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 totalled 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 70 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).

13	<p>Ensure that you do not make the following common types of errors committed by the Examiner in the past: - Giving more marks for an answer than assigned to it.</p> <ul style="list-style-type: none"> ● Wrong totalling of marks awarded on an answer. ● Wrong transfer of marks from the inside pages of the answer book to the title page. <p>Wrong question wise totalling on the title page.</p> <ul style="list-style-type: none"> ● Leaving answer or part thereof unassessed in an answer book. ● Wrong totalling 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	<p>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.</p>
15	<p>Any un assessed portion, non-carrying over of marks to the title page, or totalling 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.</p>
16	<p>The Examiners should acquaint themselves with the guidelines given in the “Guidelines for spot Evaluation” before starting the actual evaluation.</p>
17	<p>Every Examiner shall also ensure that all the answers are evaluated, marks carried over to the title page, correctly totalled and written in figures and words.</p>
18	<p>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.</p>

MARKING SCHEME 2024
CHEMISTRY (Theory)- 043
 QP CODE 56 (B)/S

Q.No.	Value points	Mark
SECTION A		
1.	(B)	1
2.	(D)	1
3.	(C)	1
4.	(C)	1
5.	(D)	1
6.	(B)	1
7.	(D)	1
8.	(C)	1
9.	(A)	1
10.	(C)	1
11.	(D)	1
12.	(B)	1
13.	(B)	1
14.	(C)	1
15.	(C)	1
16.	(A)	1
SECTION B		
17.	The solubility of a gas in a liquid is directly proportional to the partial pressure of the gas. <ul style="list-style-type: none"> • To increase the solubility of CO₂ in soft drinks and soda water, it is sealed under high pressure. • It helps scuba divers breath in high pressure areas when air is diluted with helium. 	1 ½ ½
18.	(a) (i) The energy used to split degenerate d-orbitals into two sets t _{2g} and e _g . (ii) The ligand which ligate with metal with two different donor atoms.	1 1
OR		
	(b) A complex formed by a bidentate or a polydentate ligand to form a highly stable complex. [Co(en) ₃] ³⁺ (or any other suitable example)	1 1
19.	(a) Br ₂ water (b) LiAlH ₄ / NaBH ₄ / H ₂ ,Ni /Pt/Pd	1 1
20.	(a) 2-Methylproan-2-ol (b) Propane	1 1
21.	(a) D-Glucose cyanohydrin is formed. (b) D-Gluconic acid is formed.	1 1
SECTION C		
22.	$\Delta T_f = K_f \frac{W_B}{M_B} \times \frac{1000}{W_A}$ $T_f^\circ - T_f = 1.86 \times \frac{31}{62} \times \frac{1000}{600}$ $0 - T_f = 1.55$ $T_f = -1.55^\circ \text{C} / 271.6 \text{ K} / 271.45 \text{ K}$	½ 1 ½ 1
23.	$\Lambda_m = \frac{k}{M} \times 1000 \text{ S cm}^2 \text{ mol}^{-1}$	½

	$= \frac{8 \times 10^{-5}}{2 \times 10^{-3}} \times 1000 \text{ S cm}^2 \text{ mol}^{-1}$ $= 40 \text{ S cm}^2 \text{ mol}^{-1}$ $\alpha = \frac{A_m}{A_m^\circ}$ $\alpha = \frac{40}{404}$ $= 0.099$	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$
24.	(a) potassium hexacyanomanganate (II) $t_{2g}^5 e_g^0$ (b) 3	1 1 1
25.	(a) 1-Bromobutane < 2-Bromobutane < 2-Bromo-2-methylpropane Due to increasing stability of carbocation. (b) 2-Bromo-2-methylbutane < 2-Bromopentane < 1-Bromopentane. Due to decrease in steric hindrance.	1 $\frac{1}{2}$ 1 $\frac{1}{2}$
26.	(a) Racemic mixture: Equimolar quantities of d /+ and l /- forms. (b) Chiral carbon: Carbon attached to four different atoms or group of atoms. (c) Enantiomers: Non-superimposable mirror images of optically active compounds.	1 X 3
27.	(a)  (b)  (c) $R-X + R'-\ddot{O}^- Na^+ \longrightarrow R-\ddot{O}-R' + Na X$	1 1 1
	Note: Explanation may be accepted in each case.	
28.	(a) Due to resonance the lone pair of electrons on nitrogen are less available whereas it is easily available in methyl amine. (b) Ethyl amine easily forms hydrogen bonding with water whereas in aniline due to bulky benzene ring it is unable to form hydrogen bonds. (c) Aniline forms salt with Lewis acid anhydrous $AlCl_3$. (d) Because aryl halides do not undergo nucleophilic substitution with the anion formed by phthalimide.	1 X 3
SECTION D		
29.	(a) Amino acids with more carboxyl groups as compared to amino groups are acidic whereas amino acids with more number of amino than carboxyl groups is basic. (b) Peptide linkage (c) (i) The amino acids, which can be synthesised in the body, are known as non-essential amino acids. On the other hand, those which cannot be synthesised in the body and must be obtained through diet, are known as essential amino acids. OR (c) (ii) Dipolar form of amino acid is known as zwitter ion /ion containing both positive and negative charge in an amino acid. Because they react with both acids and bases.	1 1 1+1 1+1
30.	(a) Spontaneous reaction. (b) $E_{ext.} > E_{cell}$ (c) (i)	1 1

<p>(iii)</p>  <p>(iv)</p>  <p>(v)</p>  <p>Note: Statement to be accepted in each case.</p>	<p>OR</p>	<p>1 x 5</p>
<p>(b) (i)</p> <p>(1) CH₃COCH₃ / Acetone /Propanone is formed.</p> <p>(2) CH₃CH(OH)CN / Ethanal cyanohydrins is formed.</p> <p>(3) m-nitrobenzaldehyde is formed.</p> <p>(ii)</p> <p>(1) Fluoroacetic acid.</p> <p>(2) p-nitrobenzoic acid</p>		<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>