

PART 1 - CHEMISTRY

Topic : Alcohols, phenols and ethers

SECTION-A : (Maximum Marks : 8)

This section contains **TWO** questions.

Each question has **FOUR** options (A), (B), (C) and (D). **ONE OR MORE THAN ONE** of these four option(s) is(are) correct answer(s).

For each question, choose the option(s) corresponding to (all) the correct answer(s).

Answer to each question will be evaluated according to the following marking scheme :

Full Marks : +4 ONLY if (all) the correct option(s) is(are) chosen;

Partial Marks : +3 If all the four options are correct but ONLY three options are chosen;

Partial Marks : +2 If three or more options are correct but ONLY two options are chosen, both of which are correct;

Partial Marks : +1 If two or more options are correct but ONLY one option is chosen and it is a correct option;

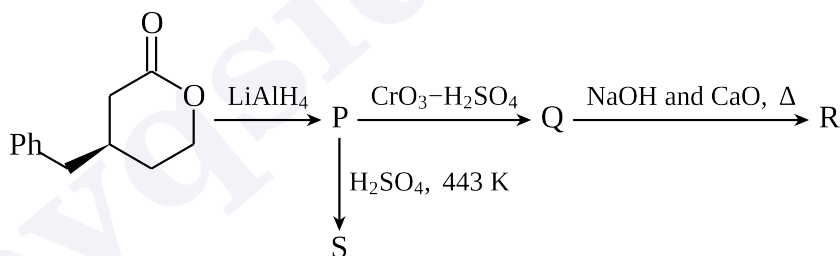
Zero Marks : 0 If none of the options is chosen (i.e. the question is unanswered);

Negative Marks : -1 In all other cases.

For example, in a question, if (A), (B) and (D) are the ONLY three options corresponding to correct answers, then choosing ONLY (A), (B) and (D) will get +4 marks; choosing ONLY (A) and (B) will get +2 marks; choosing ONLY (A) and (D) will get +2 marks; choosing ONLY (B) and (D) will get +2 marks; choosing ONLY (A) will get +1 mark; choosing ONLY (B) will get +1 mark; choosing ONLY (D) will get +1 mark; choosing no option (i.e. the question is unanswered) will get 0 marks; and choosing any other combination of options will get -1 marks.

1. For the reaction sequence given below, the correct statement(s) is(are)

[JEE Advanced 2025 Paper 2]



- (A) P is optically active. (B) S gives Bayer's test.
(C) Q gives effervescence with aq. NaHCO_3 . (D) R is an alkyne.

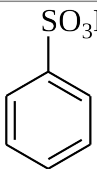
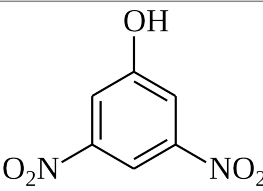
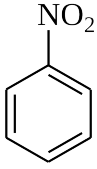
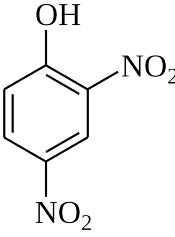
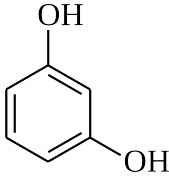
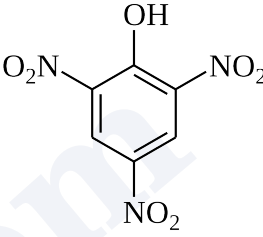
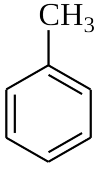
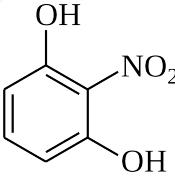
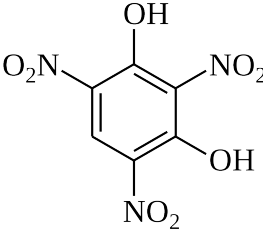
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2. **List-I** contains various reaction sequences and **List-II** contains different phenolic compounds. Match each entry in **List-I** with the appropriate entry in **List-II** and choose the correct option.

[JEE Advanced 2024 Paper 1]

Space for Rough Work

List-I		List-II	
P.	 $\xrightarrow[\text{ii) Conc. HNO}_3]{\text{i) molten NaOH, H}_3\text{O}^+}$	1.	
Q.	 $\xrightarrow[\text{v) Conc. HNO}_3 / \text{Conc. H}_2\text{SO}_4]{\begin{array}{l} \text{i) Conc. HNO}_3 / \text{Conc. H}_2\text{SO}_4 \\ \text{ii) Sn / HCl} \\ \text{iii) NaNO}_2 / \text{HCl, } 0 - 5^\circ\text{C} \\ \text{iv) H}_2\text{O} \end{array}}$	2.	
R.	 $\xrightarrow[\text{iii) H}_3\text{O}^+, \Delta]{\begin{array}{l} \text{i) Conc. H}_2\text{SO}_4 \\ \text{ii) Conc. HNO}_3 \end{array}}$	3.	
S.	 $\xrightarrow[\text{vi) H}_2\text{O}]{\begin{array}{l} \text{i) a) KMnO}_4 / \text{KOH, } \Delta; \text{ b) H}_3\text{O}^+ \\ \text{ii) Conc. HNO}_3 / \text{Conc. H}_2\text{SO}_4, \Delta \\ \text{iii) a) SOCl}_2, \text{ b) NH}_3 \\ \text{iv) Br}_2, \text{ NaOH} \\ \text{v) NaNO}_2 / \text{HCl, } 0 - 5^\circ\text{C} \end{array}}$	4.	
		5.	

(A) P-2, Q-3, R-4, S-5 (B) P-2, Q-3, R-5, S-1 (C) P-3, Q-5, R-4, S-1 (D) P-3, Q-2, R-5, S-4

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SECTION-B : (Maximum Marks : 4)

This section contains **ONE** question.

The answer to each question is a **NON-NEGATIVE INTEGER**.

For each question, enter the correct integer corresponding to the answer in the place designated to enter the answer.

Answer to each question will be evaluated according to the following marking scheme :

Full Marks : +4 If **ONLY** the correct answer is entered;

Zero Marks : 0 In all other cases.

3. An organic compound P having molecular formula $C_6H_6O_3$ gives ferric chloride test and does not have intramolecular hydrogen bond. The compound P reacts with 3 equivalents of NH_2OH to produce oxime Q. Treatment of P with excess methyl iodide in the presence of KOH produces compound R as the major product. Reaction of R with excess iso-butylmagnesium bromide followed by treatment with H_3O^+ gives compound S as the major product.

The total number of methyl ($-CH_3$) group(s) in compound S is ____.

[JEE Advanced 2024 Paper 2]

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Test Pattern : **JEE (Advanced)**[illegible]