

PART 1 - CHEMISTRY

Topic : Electrochemistry

SECTION-A : (Maximum Marks : 4)

This section contains **ONE** question.

Each question has **TWO** lists: **List-I** and **List-II**.

Four options are given representing matching of elements from List-I and List-II. **ONLY ONE** of these four options corresponds to a correct matching.

For each question, choose the option corresponding to the correct answer.

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

Full Marks : +4 If **ONLY** the correct option is chosen;

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

Negative Marks : -1 In all other cases.

1. In a conductometric titration, small volume of titrant of higher concentration is added stepwise to a larger volume of titrate of much lower concentration, and the conductance is measured after each addition.

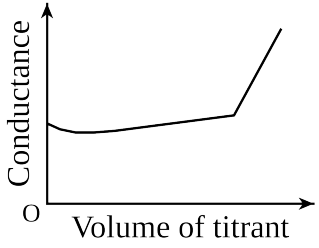
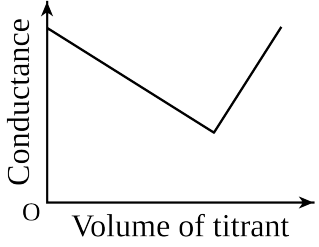
The limiting ionic conductivity (Λ_0) values (in $\text{mS m}^2 \text{mol}^{-1}$) for different ions in aqueous solutions are given below:

Ions	Ag^+	K^+	Na^+	H^+	NO_3^-	Cl^-	SO_4^{2-}	OH^-	CH_3COO^-
Λ_0	6.2	7.4	5.0	35.0	7.2	7.6	16.0	19.9	4.1

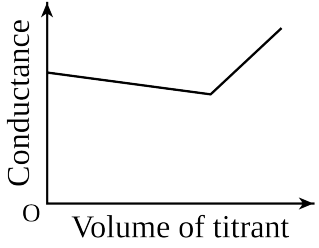
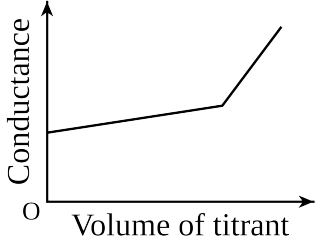
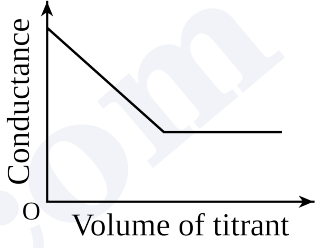
For different combinations of titrates and titrants given in **List-I**, the graphs of 'conductance' versus 'volume of titrant' are given in **List-II**.

Match each entry in **List-I** with the appropriate entry in **List-II** and choose the correct option.

[JEE Advanced 2024 Paper 1]

List-I		List-II	
P.	Titrate: KCl Titrant: AgNO_3	1.	
Q.	Titrate: AgNO_3 Titrant: KCl	2.	

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List-I		List-II	
R.	Titrate: NaOH Titrant: HCl	3.	
S.	Titrate: NaOH Titrant: CH ₃ COOH	4.	
		5.	

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

Scan or tap for the
full solution



Space for Rough Work

JEE ADVANCED ELECTROCHEMISTRY — CONDUCTOMETRIC TITRATIONS — PYQS

Test Pattern : **JEE (Advanced)**

ANSWER KEY

[illegible]