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CHEMISTRY · EAPCET (EAMCET)

Practical Chemistry & Qualitative Analysis

Previous Year Questions with answers

18 questions · **16** papers · **2011–2026** · newest paper first

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What is in this PDF: every Practical Chemistry & Qualitative Analysis question we hold from past AP and TS EAPCET (called EAMCET until 2020 in Andhra Pradesh and 2023 in Telangana) papers, with its options and answer. Where an answer comes from a source other than the official final key, it says so next to the answer.

Step-by-step solutions for every question are free in the EdLoop EAPCET app (Google Play) and on app.edloop.in. More chapters: pyq.edloop.in/free-pdfs/

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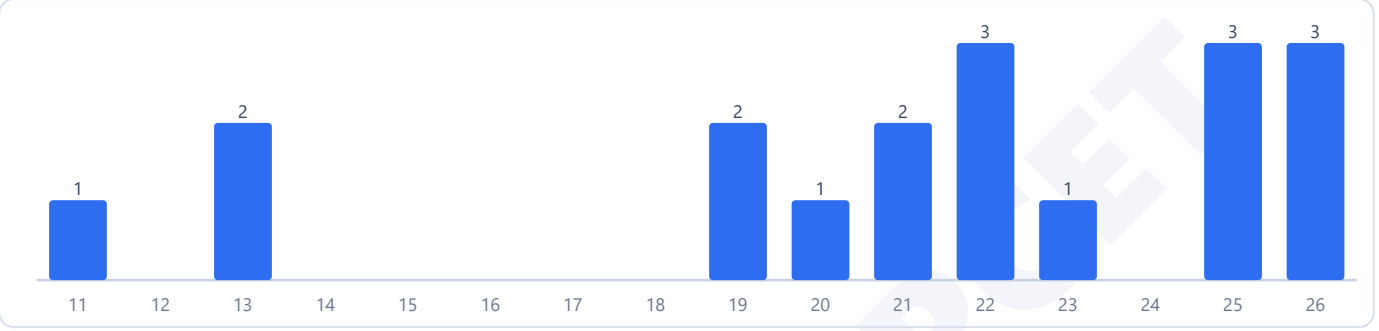
Chapter at a glance

0.3%	18	10 of 77	18 / 0
of Chemistry questions, 2022–2026	questions, 2011–2026	papers asked it, 2022–2026	MCQ / numerical, 2011–2026

Trend. Steady: 0.1 questions per paper in 2024–2026 against 0.1 in 2022–2023.

Questions per year



Counts are the questions we hold: 18 in 16 papers. No question in this chapter was found repeated across papers.

Most-asked topics in this chapter (2011–2026)

Salt Analysis	14
Titrimetric Analysis	3
Organic Practicals	1

How often it comes up

Practical Chemistry & Qualitative Analysis holds rank 31 among the 31 chemistry chapters in the modern 2022 to 2026 period. Across our complete repository of entrance papers spanning 2010 through 2026, the chapter contributed 18 questions across 149 papers, appearing in 16 of those tests to record a 0.3 percent subject share and 0.1 questions per paper. In the recent five-year timeframe from 2022 to 2026, it provided 10 questions across 77 sittings, being present in 10 papers to maintain 0.1 questions per paper and a 0.3 percent subject share.

The chapter was completely absent in 2024, but appeared in all other years of this five-year window, being absent from sixty-seven papers overall during this period. Looking at the two regional state boards between 2022 and 2026, AP tests delivered 5 questions across 48 papers (appearing in 5 papers, 0.1 questions per paper, 0.3 percent share), while TS tests generated 5 questions across 29 papers (appearing in 5 papers, 0.2 questions per paper, 0.4 percent share).

During earlier testing between 2010 and 2021, papers included 8 questions across 72 sittings (appearing in 6 tests), representing 0.1 questions per paper and a 0.3 percent subject share. Across the most recent three exam cycles from 2024 to 2026, question writers set 6 questions across 46 sittings (appearing in 6 papers), yielding 0.1 questions per test and 0.3 percent share. Comparing early testing with the last three years indicates the share is about the same, and comparing the recent five-year window with the last three years shows the share is about the same.

Most-asked topics

Questions in this laboratory-focused chapter distribute across three distinct experimental areas:

- **Salt Analysis** accounts for the lion share with 14 questions overall and 7 during the recent timeframe through 2026. Frequent problem formats focus on systemic qualitative analysis of inorganic salts: confirmatory tests for acid radicals (brown ring test for nitrate, chromyl chloride test for chloride, lead acetate paper test for sulphide,

and barium chloride test for sulphate) and group separation of basic radicals using selective precipitation reagents and flame test identification.

- **Titrimetric Analysis** supplied 3 questions across the archive, with 2 appearing between 2022 and 2026 (last tested in 2025). This area covers redox volumetric titrations, acid-base indicators, argentometric precipitation titrations, and autocatalytic mechanisms where manganese(II) accelerates potassium permanganate oxidation of oxalic acid.
- **Organic Practicals** accounts for 1 question overall, which appeared in the recent period in 2025. Items focus on distinguishing chemical tests for functional groups (Lucas test for alcohols, Tollens and Fehlings tests for aldehydes, iodoform test for methyl ketones, and neutral ferric chloride test for phenols).

What the questions look like

Laboratory chemistry problems are concise and strictly factual. A classic question asks candidates to identify which anion is confirmed by the formation of a brown ring at the interface of liquid layers when freshly prepared ferrous sulphate and concentrated sulphuric acid are added, requiring knowledge of the pentaaquanitrosyliron(II) complex cation.

Another prominent style tests reagent compositions. You will match famous laboratory reagents with their active ingredients, such as matching Tollens reagent with ammoniacal silver nitrate, Lucas reagent with anhydrous zinc chloride in concentrated hydrochloric acid, Clemmensen reagent with zinc amalgam in hydrochloric acid, and Jones reagent with chromium trioxide in aqueous sulphuric acid. Questions on flame tests ask you to match alkali and alkaline earth metal salts with characteristic emission colours viewed through cobalt glass.

How to practise it

Master the systemic scheme for cation analysis group by group. Group zero contains ammonium, detected by evolving ammonia gas on heating with sodium hydroxide, which turns Nesslers reagent brown. Group one contains lead(II), precipitated as insoluble chloride using dilute hydrochloric acid. Group two contains copper(II) and lead(II), precipitated as sulphides using hydrogen sulphide in acidic medium. Group three contains iron(III) and aluminium, precipitated as hydroxides using ammonium hydroxide in presence of ammonium chloride. Group four contains zinc, nickel, and cobalt, precipitated as sulphides in basic medium.

For anion identification, remember the distinction between dilute acid radicals (carbonate, sulphide, sulphite, and nitrite which effervesce with dilute sulphuric acid) and concentrated acid radicals (chloride, bromide, iodide, and nitrate which react only with concentrated sulphuric acid). Note that sulphate, phosphate, and borate are non-volatile radicals identified through individual wet precipitate tests.

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Q1 AP EAPCET 2026 · 15 May · Shift 1 MCQ

Which anion of the simple salt can be confirmed by Brown ring test?

(A) NO_2^-
(B) NO_3^-
(C) Br^-
(D) SO_4^{2-}

Answer: (B) NO_3^- · The council's preliminary key

Q2 TS EAPCET 2026 · 10 May · Shift 1 MCQ

Match the following

List-1 (Name of reagent)		List-2 (Composition)	
A	Jones reagent	I	$Zn - Hg/HCl$
B	Clemmensen reagent	II	conc. HCl + anhy. $ZnCl_2$
C	Tollens' reagent	III	$CrO_3 - H_2SO_4$
D	Lucas reagent	IV	$[Ag(NH_3)_2]^+$
		V	$SnCl_2$ / HCl

The correct answer is

(A) A – III, B – IV, C – V, D – II
(B) A – III, B – I, C – IV, D – II
(C) A – II, B – I, C – IV, D – III
(D) A – V, B – III, C – II, D – I

Answer: (B) A – III, B – I, C – IV, D – II · The council's preliminary key

Q3 TS EAPCET 2026 · 10 May · Shift 2 MCQ

Match the following

List-1 (Metal)		List-2 (Flame colour)	
A	Na	I	Apple green
B	Ca	II	Yellow
C	Ba	III	Brick red
D	Li	IV	Colourless
		V	Crimson red

The correct answer is

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(A) A – IV, B – III, C – II, D – I
(B) A – III, B – I, C – V, D – II
(C) A – II, B – III, C – I, D – V
(D) A – II, B – III, C – IV, D – V

Answer: (C) A – II, B – III, C – I, D – V · The council's preliminary key

Q4 AP EAPCET 2025 · 24 May · Shift 1 MCQ

What is the indicator used in Argentometric titrations ?

(A) Starch solution
(B) Eosin dye
(C) $KMnO_4$ solution
(D) Phenolphthalein

Answer: (B) Eosin dye · The council's preliminary key

Q5 AP EAPCET 2025 · 23 May · Shift 1 MCQ

Which one of the following acts as autocatlyst during titration of $KMnO_4$ and oxalic acid in presence of dilute H_2SO_4 ?

(A) H_2SO_4
(B) $KMnO_4$
(C) $H_2C_2O_4$
(D) $MnSO_4$

Answer: (D) $MnSO_4$ · The council's preliminary key

Q6 TS EAPCET 2025 · 3 May · Shift 1 MCQ

Identify the incorrect match with respect to compounds to be distinguished and reagent used

(Solution = ద్రావణం; Anhydrous = అనార్ద్ర; conc = గాఢ)

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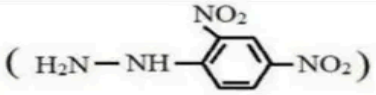
Identify the incorrect match with respect to compounds to be distinguished and reagent used
గుర్తించబడే సమ్మేళనాలకు మరియు వాడే కారకంనకు సంబంధించి సరిగ్గా జతచేయబడని దానిని గుర్తించుము
(Solution = ద్రావణం; Anhydrous = అనార్ద్ర; conc = గాఢ)

Options :

1. $CH_3OH,\ CH_3CH_2OH$ _____ $(I_2 + \text{NaOH solution})$

2. $CH_3CH_2OH,\ CH_3-\underset{\displaystyle CH_3}{\overset{\displaystyle CH_3}{\overset{|}{\underset{|}{C}}}}-OH$ _____ $(\text{Anhydrous } ZnCl_2 + \text{Conc. HCl})$

3. $CH_3-C\equiv CH,\ CH_3-C\equiv C-CH_3$ _____ (Na)

4. $CH_3-CHO,\ (CH_3)_2CO$ _____ 

(A) CH_3OH, CH_3CH_2OH _____ (I_2 + NaOH solution)

(B) CH_3CH_2OH, $CH_3-C(CH_3)(CH_3)-OH$ (tert-butyl alcohol, drawn with two CH_3 groups above and below the central C) _____ (Anhydrous $ZnCl_2$ + Conc. HCl)

(C) $CH_3-C\equiv CH$, $CH_3-C\equiv C-CH_3$ _____ (Na)

(D) CH_3-CHO, $(CH_3)_2CO$ _____ (*see the figure above*) 2,4-dinitrophenylhydrazine: H_2N-NH- attached to a benzene ring bearing NO_2 at the ortho and para positions)

Answer: (D) CH_3-CHO, $(CH_3)_2CO$ _____ (*see the figure above*) **2,4-dinitrophenylhydrazine: H_2N-NH- attached to a benzene ring bearing NO_2 at the ortho and para positions)** · The council's preliminary key

Q7 AP EAPCET 2023 · 16 May · Shift 2 MCQ

Two alkali halide salts, ACl and BCl gave crimson red and violet in their flame test respectively. A and B are respectively

(A) K, Li

(B) Li, K

(C) Li, Na

(D) Na, K

Answer: (B) Li, K · The council's preliminary key

Q8 TS EAMCET 2022 · 20 Jul · Shift 2 MCQ

Match the following

Column – I (Reaction)

A) $FeCl_3(aq) + NH_3(aq) \longrightarrow$

B) $AgCl(aq) + NH_3(aq) \longrightarrow$
C) $Cu^{2+}(aq) + NH_3(aq) \longrightarrow$

Column – II (colour of the product or nature)
I) Green ppt
II) Deep blue
III) Brown ppt
IV) Colourless

The correct match

(A) A-I, B-II, C-III
(B) A-I, B-III, C-IV
(C) A-III, B-IV, C-II
(D) A-III, B-I, C-IV

Answer: (C) A-III, B-IV, C-II · The council's preliminary key

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Q9 TS EAMCET 2022 · 19 Jul · Shift 1 MCQ

A nitrogen oxide that forms "in situ" when dilute $FeSO_4$ is treated with aqueous solution of nitrate ion and then careful addition of conc. H_2SO_4 along the sides of test tube, is

(A) NO_2
(B) NO
(C) N_2O
(D) N_2O_3

Answer: (B) NO · The council's preliminary key

Q10 AP EAPCET 2022 · 6 Jul · Shift 1 MCQ

The colour of $Mg(OH)_2$ precipitate formed when it is precipitated in the presence of magneson reagent is

(A) Green
(B) Yellow
(C) Brown
(D) Blue

Answer: (D) Blue · The council's preliminary key

Q11 AP EAPCET 2021 · 20 Aug · Shift 1 MCQ

Potassium cyanide is made alkaline with $NaOH$ and boiled with thiosulphate ions. The solution is cooled and acidified with HCl and this solution with iron (III) chloride produces ___

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(A) Prussian blue colour solution
(B) Blood red colour solution
(C) Dark brown colour solution
(D) Green colour solution

Answer: (B) Blood red colour solution · The council's preliminary key

Q12 TS EAMCET 2021 · 4 Aug · Shift 1 MCQ

Match the following
Column-1 (Reaction)
A) $4FeCl_3 + 3K_4[Fe(CN)_6] \rightarrow$
B) $ZnCl_2 + 4NaOH \rightarrow$
C) $2FeCl_3 + H_2S \rightarrow$
Column-2 (Main product)
I) $Fe_4[Fe(CN)_6]_3$
II) $FeCl_2$
III) $Zn(OH)Cl$
IV) $Fe_3[Fe(CN)_6]_3$
V) Na_2ZnO_2
VI) FeS
The correct match is

(A) A-I, B-III, C-VI
(B) A-I, B-V, C-II
(C) A-IV, B-V, C-II
(D) A-IV, B-III, C-VI

Answer: (B) A-I, B-V, C-II · The council's preliminary key

Q13 TS EAMCET 2020 · 9 Sep · Shift 1 MCQ

Brown ring test is to detect the presence of

(A) NO_3^-
(B) Cl^-
(C) I^-
(D) Br^-

Answer: (A) NO_3^- · Official TGCHE final key

Q14 TS EAMCET 2019 · 3 May · Shift 2 MCQ

Which is the correct equation for the reaction of AgCl with NH_4OH?

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(A) $AgCl + NH_4OH \rightarrow AgOH + NH_4^+ + Cl^-$
(B) $AgCl + 2NH_4OH \rightarrow [Ag(NH_3)_2]^+ + Cl^- + 2H_2O$
(C) $AgCl + 4NH_4OH \rightarrow [Ag(NH_3)_4]^+ + Cl^- + 4H_2O$
(D) $2AgCl + NH_4OH \rightarrow Ag_2O + NH_4^+ + H^+ + 2Cl^-$

Answer: (B) $AgCl + 2NH_4OH \rightarrow [Ag(NH_3)_2]^+ + Cl^- + 2H_2O$ · Official TGCHE final key

Q15 TS EAMCET 2019 · 3 May · Shift 2 MCQ

Name the gaseous products from the following A and B reactions respectively.
A. Hydrochloric acid is added to sodium sulphide
B. Conc. sulphuric acid is added to a mixture of sodium chloride and manganese dioxide
The correct answer is

(A) Cl_2 , Cl_2
(B) H_2 , HCl
(C) H_2S , O_2
(D) H_2S , Cl_2

Answer: (D) H_2S , Cl_2 · Official TGCHE final key

Q16 AP EAMCET 2013 · 10 May · Offline MCQ

Solution "X" contains Na_2CO_3 and $NaHCO_3$. 20 ml of X when titrated using methyl orange indicator consumed 60 ml of 0.1 M HCl solution. In another experiment, 20 ml of X solution when titrated using phenolphthalein consumed 20 ml of 0.1 M HCl solution. The concentrations (in mol lit^{-1}) of Na_2CO_3 and $NaHCO_3$ in X are respectively

(A) 0.01, 0.02
(B) 0.1, 0.1
(C) 0.01, 0.01
(D) 0.1, 0.01

Answer: (B) 0.1, 0.1 · The council's preliminary key

Q17 AP EAMCET 2013 · 10 May · Offline MCQ

Which one of the following gives Prussion blue colour ?

(A) $Fe_2[Fe(CN)_6]$
(B) $Na_4[Fe(CN)_6]$
(C) $Fe_3[Fe(CN)_6]_3$
(D) $Fe_4[Fe(CN)_6]_3$

Answer: (D) $Fe_4[Fe(CN)_6]_3$ · The council's preliminary key

Q18 AP EAMCET 2011 · 8 May · Offline MCQ

The solution of X having excess of caustic potash is used to detect ammonia. Which of the following is X ?

(A) $K_2[HgI_4]$
(B) $[Co(NH_3)_6]Cl_3$
(C) $K_3[Fe(NCS)_6]$
(D) $[Co(NH_3)_5SO_4]Br$

Answer: (A) $K_2[HgI_4]$ · The council's preliminary key

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