PrepWiser.

CHEMISTRY · JEE MAIN

Practical Organic Chemistry

Chapter-wise previous year questions, with answer key

63	2020–2025	2
PYQS	PAPERS	TOPICS

Systematic Qualitative Organic Analysis · Detection of Functional Groups

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2. Check yourself against the answer key at the end.
3. Got one wrong? Tap “Step-by-step solution” under it for the full working.

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Systematic Qualitative Organic Analysis · 37 PYQs

Q1 JEE Main 2025 · 7 Apr · Shift 2

In Dumas' method 292 mg of an organic compound released 50 mL of nitrogen gas (N_2) at 300 K temperature and 715 mm Hg pressure. The percentage composition of ' N ' in the organic compound is _____ % (Nearest integer) (Aqueous tension at $300K = 15mmHg$)

Numerical answer: enter the value.

Step-by-step solution ▸ prepwiser.in/questions/Pk7rU3QMDz

Q2 JEE Main 2025 · 4 Apr · Shift 2

Match List - I with List - II

	List - I (Separation of)		**List - II (Separation Technique)**
(A)	Aniline from aniline-water mixture	(I)	Simple distillation
(B)	Glycerol from spent-lye in soap industry	(II)	Fractional distillation
(C)	Different fractions of crude oil in petroleum industry	(III)	Distillation at reduced pressure
(D)	Chloroform-Aniline mixture	(IV)	Steam distillation

Choose the correct answer from the options given below :

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

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

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

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

Step-by-step solution ▸ prepwiser.in/questions/WwnaOk8TMO

Q3 JEE Main 2025 · 2 Apr · Shift 2

In Dumas' method for estimation of nitrogen, 0.5 gram of an organic compound gave 60 mL of nitrogen collected at 300 K temperature and 715 mm Hg pressure. The percentage composition of nitrogen in the compound (Aqueous tension at $300K = 15mmHg$) is_____%.

(A) 20.87

(B) 12.57

(C) 1.257

(D) 18.67

Step-by-step solution ▸ prepwiser.in/questions/VZUmXC-79g

Q4 JEE Main 2025 · 2 Apr · Shift 2

Match List - I with List - II.

List - I (Purification technique)	List - II (Mixture of organic compounds)
(A) Distillation (simple)	(I) Diesel + Petrol
(B) Fractional distillation	(II) Aniline + Water
(C) Distillation under reduced pressure	(III) Chloroform + Aniline
(D) Steam distillation	(IV) Glycerol + Spent-lye

Choose the correct answer from the options given below:

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

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

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

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

Step-by-step solution ▸ prepwiser.in/questions/MhFQmDBhF8

Q5 JEE Main 2025 · 29 Jan · Shift 2

Given below are two statements :

Statement (I): In partition chromatography, stationary phase is thin film of liquid present in the inert support.

Statement (II): In paper chromatography, the material of paper acts as a stationary phase.

In the light of the above statements, choose the **correct** answer from the options given below :

(A) Statement I is true but Statement II is false

(B) Statement I is false but Statement II is true

(C) Both Statement I and Statement II are false

(D) Both Statement I and Statement II are true

Step-by-step solution ▸ prepwiser.in/questions/z_H8HC5KRv

Q6 JEE Main 2024 · 9 Apr · Shift 2

Match List I with List II

	LIST I (Test)		LIST II (Observation)
A.	Br_2 water test	I.	Yellow orange or orange red precipitate formed
B.	Ceric ammonium nitrate test	II.	Reddish orange colour disappears
C.	Ferric chloride test	III.	Red colour appears
D.	2, 4 - DNP test	IV.	Blue, Green, Violet or Red colour appear

Choose the correct answer from the options given below:

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

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

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

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

Step-by-step solution ▸ prepwiser.in/questions/YGix8JV-0B

Q7 JEE Main 2024 · 9 Apr · Shift 1

Identify the incorrect statements regarding primary standard of titrimetric analysis.

(A) It should be purely available in dry form.

(B) It should not undergo chemical change in air.

(C) It should be hygroscopic and should react with another chemical instantaneously and stoichiometrically.

(D) It should be readily soluble in water.

(E) $KMnO_4$ & $NaOH$ can be used as primary standard.

Choose the correct answer from the options given below :

(A) (C) and (E) only

(B) (A) and (B) only

(C) (B) and (E) only

(D) (C) and (D) only

Step-by-step solution ▸ prepwiser.in/questions/lGqIa4w4KF

Q8 JEE Main 2024 · 6 Apr · Shift 2

The correct statement among the following, for a "chromatography" purification method is :

(A) R_f of a polar compound is smaller than that of a non-polar compound.

(B) Non-polar compounds are retained at top and polar compounds come down in column chromatography.

(C) Organic compounds run faster than solvent in the thin layer chromatographic plate.

(D) R_f is an integral value.

Step-by-step solution ▸ prepwiser.in/questions/1GDEwfxz_J

Q9 JEE Main 2024 · 6 Apr · Shift 1

Which of the following statements are correct?

A. Glycerol is purified by vacuum distillation because it decomposes at its normal boiling point.

B. Aniline can be purified by steam distillation as aniline is miscible in water.

C. Ethanol can be separated from ethanol water mixture by azeotropic distillation because it forms azeotrope.

D. An organic compound is pure, if mixed M.P. is remained same.

Choose the most appropriate answer from the options given below :

(A) A, C, D only

(B) B, C, D only

(C) A, B, D only

(D) A, B, C only

Step-by-step solution ▸ prepwiser.in/questions/l7D4tvHX1a

Q10 JEE Main 2024 · 1 Feb · Shift 1

In Kjeldahl's method for estimation of nitrogen, $\mathrm{CuSO_4}$ acts as :

(A) catalytic agent

(B) hydrolysis agent

(C) reducing agent

(D) oxidising agent

Step-by-step solution ▸ prepwiser.in/questions/CrV9yaKNlD

Q11 JEE Main 2024 · 1 Feb · Shift 1

Given below are two statements :

Statement (I) : Potassium hydrogen phthalate is a primary standard for standardisation of sodium hydroxide solution.

Statement (II) : In this titration phenolphthalein can be used as indicator.

In the light of the above statements, choose the **most appropriate** answer from the options given below :

(A) Both Statement I and Statement II are correct

(B) Statement I is incorrect but Statement II is correct

(C) Both Statement I and Statement II are incorrect

(D) Statement I is correct but Statement II is incorrect

Step-by-step solution ▸ prepwiser.in/questions/cqdgucneVa

Q12 JEE Main 2024 · 1 Feb · Shift 2

Following Kjeldahl's method, $1\mathrm{g}$ of organic compound released ammonia, that neutralised $10\mathrm{mL}$ of $2\mathrm{M}\,\mathrm{H_2SO_4}$. The percentage of nitrogen in the compound is _____ $\%$.

Numerical answer: enter the value.

Step-by-step solution ▸ prepwiser.in/questions/3S34FcTi66

Q13 JEE Main 2024 · 31 Jan · Shift 2

The fragrance of flowers is due to the presence of some steam volatile organic compounds called essential oils. These are generally insoluble in water at room temperature but are miscible with water vapour in vapour phase. A suitable method for the extraction of these oils from the flowers is -

(A) distillation
(B) steam distillation
(C) distillation under reduced pressure
(D) crystallisation

Step-by-step solution ▸ prepwiser.in/questions/egrBc893ne

Q14 JEE Main 2024 · 31 Jan · Shift 1

Match List I with List II

	List - I (Technique)		List - II (Application
(A)	Distillation	(I)	Separation of glycerol from spent-lye
(B)	Fractional distillation	(II)	Aniline - Water mixture
(C)	Steam distillation	(III)	Separation of crude oil fractions
(D)	Distillation under reduced pressure	(IV)	Chloroform - Aniline

Choose the correct answer from the options given below:

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

Step-by-step solution ▸ prepwiser.in/questions/EUjgLimt_Y

Q15 JEE Main 2024 · 30 Jan · Shift 1

On a thin layer chromatographic plate, an organic compound moved by 3.5cm, while the solvent moved by 5cm. The retardation factor of the organic compound is _____ $\times 10^{-1}$.

Numerical answer: enter the value.

Step-by-step solution ▸ prepwiser.in/questions/Fh1tzMP53-

Q16 JEE Main 2024 · 29 Jan · Shift 2

Chromatographic technique/s based on the principle of differential adsorption is / are

A. Column chromatography

B. Thin layer chromatography

C. Paper chromatography

Choose the most appropriate answer from the options given below:

(A) B only
(B) A only
(C) A & B only
(D) C only

Step-by-step solution ▸ prepwiser.in/questions/AULr2gqWtD

Q17 JEE Main 2024 · 27 Jan · Shift 2

The technique used for purification of steam volatile water immiscible substances is :

(A) Fractional distillation

(B) Distillation

(C) Fractional distillation under reduced pressure

(D) Steam distillation

Step-by-step solution ▸ prepwiser.in/questions/JHYCG-l-7W

Q18 JEE Main 2023 · 13 Apr · Shift 1

$KMnO_4$ is titrated with ferrous ammonium sulphate hexahydrate in presence of dilute H_2SO_4. Number of water molecules produced for 2 molecules of $KMnO_4$ is _____.

Numerical answer: enter the value.

Step-by-step solution ▸ prepwiser.in/questions/4VjQglvwfm

Q19 JEE Main 2023 · 10 Apr · Shift 1

Given below are two statements:

Statement I : Aqueous solution of $K_2Cr_2O_7$ is preferred as a primary standard in volumetric analysis over $Na_2Cr_2O_7$ aqueous solution.

Statement II : $K_2Cr_2O_7$ has a higher solubility in water than $Na_2Cr_2O_7$.

In the light of the above statements, choose the correct answer from the options given below:

(A) Statement I is true but Statement II is false

(B) Both Statement I and Statement II are false

(C) Statement I is false but Statement II is true

(D) Both Statement I and Statement II are true

Step-by-step solution ▸ prepwiser.in/questions/gTRyWkZEjq

Q20 JEE Main 2023 · 8 Apr · Shift 2

Given below are two statements:

Statement I : Methyl orange is a weak acid.

Statement II : The benzenoid form of methyl orange is more intense/deeply coloured than the quinonoid form.

In the light of the above statement, choose the most appropriate answer from the options given below:

(A) Both Statement I and Statement II are incorrect

(B) Statement I is incorrect but Statement II is correct

(C) Both statement I and Statement II are correct

(D) Statement I is correct but Statement II is incorrect

Step-by-step solution ▸ prepwiser.in/questions/J6a9EALjWk

Q21 JEE Main 2022 · 30 Jun · Shift 1

An organic compound with 51.6% sulfur is heated in a Carius tube. The amount of this compound which will form 0.752 g of barium sulphate is _____ $\times 10^{-1}$ g.

(Given molar mass of barium sulphate 233 g mol^{-1}) (Nearest integer).

Numerical answer: enter the value.

Step-by-step solution ▸ prepwiser.in/questions/Tnm-wFDoii

Q22 JEE Main 2022 · 28 Jun · Shift 1

In the estimation of bromine, 0.5 g of an organic compound gave 0.40 g of silver bromide. The percentage of bromine in the given compound is _____ % (nearest integer)

(Relative atomic masses of Ag and Br are 108u and 80u, respectively).

Numerical answer: enter the value.

Step-by-step solution ▸ prepwiser.in/questions/c-bNfamvQY

Q23 JEE Main 2022 · 28 Jun · Shift 1

A 2.0 g sample containing MnO_2 is treated with HCl liberating Cl_2. The Cl_2 gas is passed into a solution of KI and 60.0 mL of 0.1 M $Na_2S_2O_3$ is required to titrate the liberated iodine. The percentage of MnO_2 in the sample is _____. (Nearest integer)

[Atomic masses (in u) Mn = 55; Cl = 35.5; O = 16, I = 127, Na = 23, K = 39, S = 32]

Numerical answer: enter the value.

Step-by-step solution ▸ prepwiser.in/questions/wIggNKtft6

Q24 JEE Main 2022 · 27 Jun · Shift 2

0.25 g of an organic compound containing chlorine gave 0.40 g of silver chloride in Carius estimation. The percentage of chlorine present in the compound is _____. [in nearest integer]

(Given : Molar mass of Ag is 108 g mol^{-1} and that of Cl is 35.5 g mol^{-1})

Numerical answer: enter the value.

Step-by-step solution ▸ prepwiser.in/questions/VvYz0q1V7r

Q25 JEE Main 2022 · 24 Jun · Shift 2

0.2 g of an organic compound was subjected to estimation of nitrogen by Dumas method in which volume of N_2 evolved (at STP) was found to be 22.400 mL. The percentage of nitrogen in the compound is _____. [nearest integer]

(Given : Molar mass of N_2 is 28 g mol^{-1}. Molar volume of N_2 at STP : 22.4 L)

Numerical answer: enter the value.

Step-by-step solution ▸ prepwiser.in/questions/feWUBvKJ3T

Q26 JEE Main 2021 · 27 Aug · Shift 1

Acidic ferric chloride solution on treatment with excess of potassium ferrocyanide gives a Prussian blue coloured colloidal species. It is :

(A) $Fe_4[Fe(CN)_6]_3$

(B) $K_5Fe[Fe(CN)_6]_2$

(C) $HFe[Fe(CN)_6]$

(D) $KFe[Fe(CN)_6]$

Step-by-step solution ▸ prepwiser.in/questions/mlQEs3vAof

Q27 JEE Main 2021 · 26 Aug · Shift 2

In the sulphur estimation, 0.471 g of an organic compound gave 1.44 g of barium sulphate. The percentage of sulphur in the compound is _____%. (Nearest integer)

(Atomic Mass of Ba = 137 u)

Numerical answer: enter the value.

Step-by-step solution ▸ prepwiser.in/questions/npYkfrCu14

Q28 JEE Main 2021 · 26 Aug · Shift 1

Which one of the following complexes is violet in colour?

(A) $[Fe(CN)_6]^{4-}$

(B) $[Fe(SCN)_6]^{4-}$

(C) $Fe_4[Fe(CN_6)]_3 \cdot H_2O$

(D) $[Fe(CN)_5NOS]^{4-}$

Step-by-step solution ▸ prepwiser.in/questions/Kgkfuh_XXo

Q29 JEE Main 2021 · 27 Jul · Shift 1

An organic compound is subjected to chlorination to get compound A using 5.0 g of chlorine. When 0.5 g of compound A is reacted with $AgNO_3$ [Carius Method], the percentage of chlorine in compound A is _____ when it forms 0.3849 g of AgCl. (Round off to the Nearest Integer)

(Atomic masses of Ag and Cl are 107.87 and 35.5 respectively)

Numerical answer: enter the value.

Step-by-step solution ▸ prepwiser.in/questions/ctUcifKvBW

Q30 JEE Main 2021 · 22 Jul · Shift 2

Methylation of 10 g of benzene gave 9.2 g of toluene. Calculate the percentage yield of toluene _____. (Nearest integer)

Numerical answer: enter the value.

Step-by-step solution ▸ prepwiser.in/questions/J6kR4k0zYP

Q31 JEE Main 2021 · 16 Mar · Shift 2

Match List - I with List - II :

List - I Test/Reagents/Observation(s)	List - II Species detected
(a) Lassaigne's Test	(i) Carbon
(b) Cu(II) oxide	(ii) Sulphur
(c) Silver nitrate	(iii) N, S, P, and halogen
(d) The sodium fusion extract gives black precipitate with acetic acid and lead acetate	(iv) Halogen Specifically

The correct match is :

(A) (a)-(iii), (b)-(i), (c)-(ii), (d)-(iv)

(B) (a)-(i), (b)-(iv), (c)-(iii), (d)-(ii)

(C) (a)-(iii), (b)-(i), (c)-(iv), (d)-(ii)

(D) (a)-(i), (b)-(ii), (c)-(iv), (d)-(iii)

Step-by-step solution ▸ prepwiser.in/questions/XeW6L9gAR9

Q32 JEE Main 2021 · 26 Feb · Shift 2

Seliwanoff test and Xanthoproteic test are used for the identification of _____ and _____ respectively.

(A) ketoses, proteins

(B) proteins, ketoses

(C) aldoses, ketoses

(D) ketoses, aldoses

Step-by-step solution ▸ prepwiser.in/questions/NknEF5K65C

Q33 JEE Main 2021 · 26 Feb · Shift 1

Which of the following is 'a' FALSE statement ?

(A) Carius method is used for the estimation of nitrogen in an organic compound.

(B) Kjeldahl's method is used for the estimation of nitrogen in an organic compound.

(C) Carius tube is used in the estimation of sulphur in an organic compound.

(D) Phosphoric acid produced on oxidation of phosphorus present in an organic compound is precipitated as $Mg_2P_2O_7$ by adding magnesia mixture.

Step-by-step solution ▸ prepwiser.in/questions/URdHU3C634

Q34 JEE Main 2021 · 25 Feb · Shift 2

Which of the following compound is added to the sodium extract before addition of silver nitrate for testing of halogens?

(A) Nitric acid

(B) Sodium hydroxide

(C) Ammonia

(D) Hydrochloric acid

Step-by-step solution ▸ prepwiser.in/questions/JFkQUPpOsh

Q35 JEE Main 2021 · 25 Feb · Shift 2

Consider titration of NaOH solution versus 1.25 M oxalic acid solution. At the end point following burette readings were obtained.

(i) 4.5 mL

(ii) 4.5 mL

(iii) 4.4 mL

(iv) 4.4 mL

(v) 4.4 mL

If the volume of oxalic acid taken was 10.0 mL then the molarity of the NaOH solution is _____ M. (Rounded off to the nearest integer)

Numerical answer: enter the value.

Step-by-step solution ▸ prepwiser.in/questions/8myuwY6syy

Q36 JEE Main 2020 · 2 Sep · Shift 2

If you spill a chemical toilet cleaning liquid on your hand, your first aid would be

(A) aqueous NaOH

(B) aqueous $NaHCO_3$

(C) aqueous NH_3

(D) vinegar

Step-by-step solution ▸ prepwiser.in/questions/icumGgOq_h

Q37 JEE Main 2020 · 9 Jan · Shift 1

A chemist has 4 samples of artificial sweetener A, B, C and D. To identify these samples, he performed certain experiments and noted the following observations :

(i) A and D both form blue-violet colour with ninhydrin.

(ii) Lassaigne extract of C gives positive $AgNO_3$ test and negative $Fe_4[Fe(CN)_6]_3$ test.

(iii) Lassaigne extract of B and D gives positive sodium nitroprusside test

Based on these observations which option is correct ?

(A) A : Aspartame ; B : Alitame ; C : Saccharin ; D ; Sucralose

(B) A : Alitame ; B : Saccharin ; C : Aspartame ; D ; Sucralose

(C) A : Aspartame ; B : Saccharin ; C : Sucralose ; D ; Alitame

(D) A : Saccharin ; B : Alitame ; C : Sucralose ; D ; Aspartame

Step-by-step solution ▸ prepwiser.in/questions/heIDgPP9TJ

Detection of Functional Groups · 26 PYQs

Q38 JEE Main 2025 · 4 Apr · Shift 1

In Dumas' method for estimation of nitrogen 1 g of an organic compound gave 150 mL of nitrogen collected at 300 K temperature and 900 mm Hg pressure. The percentage composition of nitrogen in the compound is _____ % (nearest integer)

(Aqueous tension at $300\mathrm{K} = 15\mathrm{mmHg}$)

Numerical answer: enter the value.

Step-by-step solution ▸ prepwiser.in/questions/q3MPcydFRG

Q39 JEE Main 2025 · 29 Jan · Shift 2

In the sulphur estimation, 0.20 g of a pure organic compound gave 0.40 g of barium sulphate. The percentage of sulphur in the compound is _____ $\times 10^{-1}\%$.

(Molar mass : $\mathrm{O} = 16, \mathrm{S} = 32, \mathrm{Ba} = 137$ in gmol^{-1})

Numerical answer: enter the value.

Step-by-step solution ▸ prepwiser.in/questions/FA6XbDJfBm

Q40 JEE Main 2025 · 24 Jan · Shift 2

In Carius method of estimation of halogen, 0.25 g of an organic compound gave 0.15 g of silver bromide (AgBr). The percentage of Bromine in the organic compound is _____ $\times 10^{-1}\%$ (Nearest integer).

(Given : Molar mass of Ag is 108 and Br is $80\mathrm{gmol}^{-1}$)

Numerical answer: enter the value.

Step-by-step solution ▸ prepwiser.in/questions/vUhgdPtJlI

Q41 JEE Main 2025 · 23 Jan · Shift 1

Given below are two statements:

Statement I: In Lassaigne's test, the covalent organic molecules are transformed into ionic compounds.

Statement II: The sodium fusion extract of an organic compound having N and S gives prussian blue colour with $\mathrm{FeSO_4}$ and $\mathrm{Na_4[Fe(CN)_6]}$

In the light of the above statements, choose the correct answer from the options given below

(A) Both Statement I and Statement II are false

(B) Statement I is false but Statement II is true

(C) Both Statement I and Statement II are true

(D) Statement I is true but Statement II is false

Step-by-step solution ▸ prepwiser.in/questions/iIubGPfB7V

Q42 JEE Main 2024 · 8 Apr · Shift 2

Match List I with List II

	LIST I (Test)		LIST II (Identification)
A.	Bayer's test	I.	Phenol
B.	Ceric ammonium nitrate test	II.	Aldehyde
C.	Phthalein dye test	III.	Alcoholic-OH group
D.	Schiff's test	IV.	Unsaturation

Choose the correct answer from the options given below :

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

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

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

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

Step-by-step solution ▸ prepwiser.in/questions/2DWGuCgCKS

Q43 JEE Main 2024 · 30 Jan · Shift 1

The Lassiagne's extract is boiled with dil HNO_3 before testing for halogens because,

(A) Silver halides are soluble in HNO_3.

(B) $AgCN$ is soluble in HNO_3.

(C) Na_2S and $NaCN$ are decomposed by HNO_3.

(D) Ag_2S is soluble in HNO_3.

Step-by-step solution ▸ prepwiser.in/questions/6eQv2ei4OU

Q44 JEE Main 2024 · 29 Jan · Shift 1

Appearance of blood red colour, on treatment of the sodium fusion extract of an organic compound with $FeSO_4$ in presence of concentrated H_2SO_4 indicates the presence of element/s

(A) Br

(B) S

(C) N and S

(D) N

Step-by-step solution ▸ prepwiser.in/questions/IjKIxs8qtc

Q45 JEE Main 2024 · 27 Jan · Shift 2

Phenolic group can be identified by a positive:

(A) Tollen's test

(B) Phthalein dye test

(C) Carbylamine test

(D) Lucas test

Step-by-step solution ▸ prepwiser.in/questions/VCFyTxYgdl

Q46 JEE Main 2023 · 13 Apr · Shift 2

$0.400g$ of an organic compound (X) gave $0.376g$ of $AgBr$ in Carius method for estimation of bromine. $\%$ of bromine in the compound (X) is _____.

(Given: Molar mass $AgBr = 188 g mol^{-1}$

$Br = 80 g mol^{-1}$)

Numerical answer: enter the value.

Step-by-step solution ▸ prepwiser.in/questions/0uWiW42vTw

Q47 JEE Main 2023 · 6 Apr · Shift 1

Match List I with List II

	LIST I Element detected		LIST II Reagent used / Product formed
A.	Nitrogen	I.	$Na_2[Fe(CN)_5NO]$
B.	Sulphur	II.	$AgNO_3$
C.	Phosphorous	III.	$Fe_4[Fe(CN)_6]_3$
D.	Halogen	IV.	$(NH_4)_2MoO_4$

Choose the correct answer from the options given below:

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

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

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

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

Step-by-step solution ▸ prepwiser.in/questions/kdF6P5ciHu

Q48 JEE Main 2023 · 31 Jan · Shift 2

In Dumas method for the estimation of N_2, the sample is heated with copper oxide and the gas evolved is passed over :

(A) Copper oxide

(B) Copper gauze

(C) Pd

(D) Ni

Step-by-step solution ▸ prepwiser.in/questions/01IIsc4RBH

Q49 JEE Main 2023 · 29 Jan · Shift 1

Compound that will give positive Lassaigne's test for both nitrogen and halogen is :

(A) $NH_2OH.HCl$

(B) $N_2H_4.HCl$

(C) $CH_3NH_2.HCl$

(D) NH_4Cl

Step-by-step solution ▸ prepwiser.in/questions/BzGcKPEgUy

Q50 JEE Main 2022 · 28 Jul · Shift 2

A sample of $0.125g$ of an organic compound when analyzed by Duma's method yields $22.78mL$ of nitrogen gas collected over KOH solution at $280K$ and $759mm\ Hg$. The percentage of nitrogen in the given organic compound is _____. (Nearest integer)

Given :

(a) The vapour pressure of water of $280K$ is $14.2mm\ Hg$.

(b) $R = 0.082L\ atm\ K^{-1}mol^{-1}$

Numerical answer: enter the value.

Step-by-step solution ▸ prepwiser.in/questions/VJ56PYRllg

Q51 JEE Main 2022 · 25 Jul · Shift 1

While estimating the nitrogen present in an organic compound by Kjeldahl's method, the ammonia evolved from $0.25\mathrm{g}$ of the compound neutralized $2.5\mathrm{mL}$ of $2\ \mathrm{M}\ \mathrm{H_2SO_4}$. The percentage of nitrogen present in organic compound is _____.

Numerical answer: enter the value.

Step-by-step solution ▸ prepwiser.in/questions/qQwUqRzJDQ

Q52 JEE Main 2022 · 30 Jun · Shift 1

The reagent neutral ferric chloride is used to detect the presence of _____

(A) sulphide ion and alcoholic $-$OH group.

(B) acetate ion and phenolic $-$OH group.

(C) sulphide ion and phenolic $-$OH group.

(D) acetate ion and alcoholic $-$OH group.

Step-by-step solution ▸ prepwiser.in/questions/YKkfiUvagn

Q53 JEE Main 2022 · 29 Jun · Shift 1

Kjeldahl's method was used for the estimation of nitrogen in an organic compound. The ammonia evolved from 0.55 g of the compound neutralised 12.5 mL of 1 M H_2SO_4 solution. The percentage of nitrogen in the compound is _____. (Nearest integer)

Numerical answer: enter the value.

Step-by-step solution ▸ prepwiser.in/questions/qfjkfeIMfz

Q54 JEE Main 2022 · 28 Jun · Shift 1

The formula of the purple colour formed in Laissaigne's test for sulphur using sodium nitroprusside is :

(A) $NaFe[Fe(CN)_6]$

(B) $Na[Cr(NH_3)_2(NCS)_4]$

(C) $Na_2[Fe(CN)_5(NO)]$

(D) $Na_4[Fe(CN)_5(NOS)]$

Step-by-step solution ▸ prepwiser.in/questions/KfTuB6Y3Q4

Q55 JEE Main 2022 · 26 Jun · Shift 1

Given below are two statements :

Statement I : In 'Lassaigne's Test', when both nitrogen and sulphur are present in an organic compound, sodium thiocyanate is formed.

Statement II : If both nitrogen and sulphur are present in an organic compound, then the excess of sodium used in sodium fusion will decompose the sodium thiocyanate formed to give NaCN and Na_2S.

In the light of the above statements, choose the most appropriate answer from the options given below :

(A) Both Statement I and Statement II are correct.

(B) Both Statement I and Statement II are incorrect.

(C) Statement I is correct but Statement II is incorrect.

(D) Statement I is incorrect but Statement II is correct.

Step-by-step solution ▸ prepwiser.in/questions/Bm54yEZDgp

Q56 JEE Main 2021 · 31 Aug · Shift 2

The transformation occurring in Duma's method is given below :

$$C_2H_7N + \left(2x + \frac{y}{2}\right) CuO \rightarrow xCO_2 + \frac{y}{2}H_2O + \frac{z}{2}N_2 + \left(2x + \frac{y}{2}\right) Cu$$

The value of y is _____. (Integer answer)

Numerical answer: enter the value.

Step-by-step solution ▸ prepwiser.in/questions/CCrZ89rqqu

Q57 JEE Main 2021 · 27 Aug · Shift 2

Which one of the following tests used for the identification of functional groups in organic compounds does not use copper reagent?

(A) Barfoed's test

(B) Seliwanoff's test

(C) Benedict's test

(D) Biuret test for peptide bond

Step-by-step solution ▸ prepwiser.in/questions/nCHQ_aW8tA

Q58 JEE Main 2021 · 27 Aug · Shift 1

The number of moles of CuO, that will be utilized in Dumas method for estimation nitrogen in a sample of 57.5 g of N, N-dimethylaminopentane is _____ $\times 10^{-2}$. (Nearest integer)

Numerical answer: enter the value.

Step-by-step solution ▸ prepwiser.in/questions/Cx0Q_xW4Yb

Q59 JEE Main 2021 · 20 Jul · Shift 2

In Carius method, halogen containing organic compound is heated with fuming nitric acid in the presence of :

(A) HNO_3

(B) $AgNO_3$

(C) $CuSO_4$

(D) $BaSO_4$

Step-by-step solution ▸ prepwiser.in/questions/v2cW_voGit

Q60 JEE Main 2021 · 16 Mar · Shift 2

In Duma's method of estimation of nitrogen, 0.1840 g of an organic compound gave 30 mL of nitrogen collected at 287 K and 758 mm of Hg pressure. The percentage composition of nitrogen in the compound is _____. (Round off to the Nearest Integer). [Given : Aqueous tension at 287 K = 14 mm of Hg]

Numerical answer: enter the value.

Step-by-step solution ▸ prepwiser.in/questions/HBDqZJ-diU

Q61 JEE Main 2021 · 26 Feb · Shift 2

Ceric ammonium nitrate and $CHCl_3$/alc. KOH are used for the identification of functional groups present in _____ and _____ respectively.

(A) amine, alcohol

(B) alcohol, phenol

(C) alcohol, amine

(D) amine, phenol

Step-by-step solution ▸ prepwiser.in/questions/rTlLVe6_si

Q62 JEE Main 2020 · 6 Sep · Shift 1

In an estimation of bromine by Carius method, 1.6 g of an organic compound gave 1.88 g of AgBr. The mass percentage of bromine in the compound is _____.

(Atomic mass, Ag = 108, Br = 80 g mol^{-1})

Numerical answer: enter the value.

Step-by-step solution ▸ prepwiser.in/questions/tYXFVOaKh2

Q63 JEE Main 2020 · 9 Jan · Shift 2

A, B and C are three biomolecules. The results of the tests performed on them are given below:

	Molisch's Test	Barfoed Test	Biuret Test
A	Positive	Negative	Negative
B	Positive	Positive	Negative
C	Negative	Negative	Positive

A, B and C are respectively :

(A) A = Lactose, B = Glucose, C = Albumin

(B) A = Lactose, B = Fructose, C = Alanine

(C) A = Lactose, B = Glucose, C = Alanine

(D) A = Glucose, B = Fructose, C = Albumin

Step-by-step solution ▸ prepwiser.in/questions/iyiIUufpy-

Answer key: Practical Organic Chemistry

Answers follow NTA's final answer keys. Typing errors are possible, so check doubtful answers against the official key. Spotted a mistake? prepwiser.in/feedback · Terms: prepwiser.in/terms

Numbers match the question numbers above. For full working, open the solution link under each question.

1 **18**	2 **A**	3 **B**	4 **A**	5 **A**	6 **A**	7 **A**	8 **A**
9 **A**	10 **A**	11 **A**	12 **56**	13 **B**	14 **D**	15 **7**	16 **C**
17 **D**	18 **68**	19 **A**	20 **A**	21 **2**	22 **34**	23 **13**	24 **40**
25 **14**	26 **A**	27 **42**	28 **D**	29 **19**	30 **78**	31 **C**	32 **A**
33 **A**	34 **A**	35 **6**	36 **B**	37 **C**	38 **20**	39 **275**	40 **255**
41 **D**	42 **D**	43 **C**	44 **C**	45 **B**	46 **40**	47 **A**	48 **B**
49 **C**	50 **22**	51 **56**	52 **B**	53 **64**	54 **D**	55 **A**	56 **7**
57 **B**	58 **1125**	59 **B**	60 **19**	61 **C**	62 **50**	63 **A**	