

PYQSide

JEE MAIN PRINCIPLES RELATED TO PRACTICAL CHEMISTRY — METHODS OF PURIFICATION OF ORGANIC COMPOUNDS — PYQS

Max. Marks: 48

Questions: 12

Section A (MCQ)

Q.1 Given below are two statements :

Statement-I: Vapours of the liquid with higher boiling point condense before vapours of the liquid with lower boiling points in fractional distillation.

Statement-II: The vapours rising up in the fractionating column become richer in high boiling component of the mixture.

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

[JEE Main 2026 (Online) 8th April Evening Shift]

- (1) Both Statement-I and Statement-II are true
- (2) Both Statement-I and Statement-II are false
- (3) Statement-I is true but Statement-II is false
- (4) Statement-I is false but Statement-II is true

Scan or tap for the full solution



Q.2 R_f value for 2-methylpropene in a solvent system (Ethyl acetate + ether) is 0.42. 2-methylpropene is treated with dilute H_2SO_4 to give major organic product (X). R_f value for (X) in the same solvent system under identical condition will be:

[JEE Main 2026 (Online) 6th April Morning Shift]

- (1) 0.42
- (2) 0.82
- (3) 0.62
- (4) 0.12

Scan or tap for the full solution



Q.3 Given below are two statements :

Statement-I: A mixture of $C_{12}H_{22}O_{11}$ (sugar) and NaCl can be separated by dissolving sugar in alcohol, due to differential solubility.

Statement-II: Rose essence from rose petals is separated by steam distillation due to its high volatility and insolubility in H_2O .

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

[JEE Main 2026 (Online) 6th April Evening Shift]

- (1) Both Statement-I and Statement-II are true
- (2) Both Statement-I and Statement-II are false
- (3) Statement-I is true but Statement-II is false
- (4) Statement-I is false but Statement-II is true

Scan or tap for the full solution



Q.4 Match List - I with List - II.

[JEE Main 2026 (Online) 5th April Evening Shift]

Purification technique		Used to separate	
A.	Simple distillation	I.	Steam volatile compound
B.	Fractional distillation	II.	Two liquids with large difference in boiling points
C.	Steam distillation	III.	Liquid decomposing at its boiling point
D.	Distillation under reduced pressure	IV.	Two liquids with close boiling points

- (1) A-II, B-III, C-I, D-IV
- (2) A-II, B-IV, C-I, D-III
- (3) A-II, B-IV, C-III, D-I
- (4) A-IV, B-III, C-II, D-I

Scan or tap for the full solution



Q.5 Given below are two statements :

Statement-I: 1,2,3-Trihydroxypropane can be separated from water by simple distillation.

Statement-II: An azeotropic mixture cannot be separated by fractional distillation.

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

[JEE Main 2026 (Online) 2nd April Morning Shift]

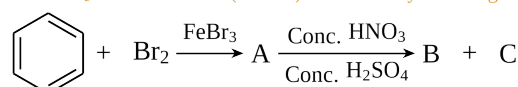
- (1) Both Statement-I and Statement-II are true
- (2) Both Statement-I and Statement-II are false
- (3) Statement-I is true but Statement-II is false
- (4) Statement-I is false but Statement-II is true

Scan or tap for the full solution



Q.6 Method used for separation of mixture of products (B and C) obtained in the following reaction is

[JEE Main 2026 (Online) 28th January Morning Shift]



- (1) simple distillation
- (2) sublimation
- (3) fractional distillation
- (4) steam distillation

Scan or tap for the full solution



Q.7 Given below are two statements :

Statement-I: Sublimation is used for the separation and purification of compounds with low melting point.

Statement-II: The boiling point of a liquid increases as the external pressure is reduced.

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

[JEE Main 2026 (Online) 23rd January Morning Shift]

- (1) Both Statement-I and Statement-II are false
- (2) Statement-I is true but Statement-II is false
- (3) Both Statement-I and Statement-II are true
- (4) Statement-I is false but Statement-II is true

Scan or tap for the full solution



Q.8 A mixture of 1 g each of chlorobenzene, aniline, and benzoic acid is dissolved in 50 mL ethyl acetate and placed in a separating funnel. 5 M NaOH (30 mL) was added in the same funnel. The funnel was shaken vigorously and then kept aside. The ethyl acetate layer in the funnel contains :

[JEE Main 2025 (Online) 7th April Evening Shift]

- (1) chlorobenzene and aniline
- (2) benzoic acid and aniline
- (3) benzoic acid
- (4) benzoic acid and chlorobenzene

Scan or tap for the full solution



Q.9 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 : [JEE Main 2025 (Online) 4th April Evening Shift]

- (1) (A)-(IV), (B)-(III), (C)-(II), (D)-(I)
- (2) (A)-(I), (B)-(II), (C)-(III), (D)-(IV)
- (3) (A)-(III), (B)-(IV), (C)-(I), (D)-(II)
- (4) (A)-(II), (B)-(I), (C)-(IV), (D)-(III)

Scan or tap for the full solution



Q.10 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

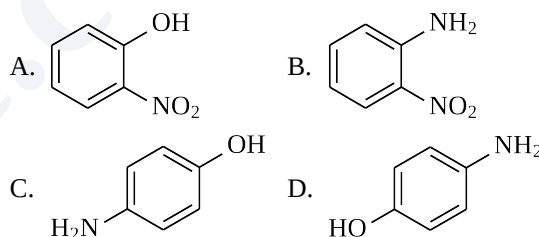
Choose the correct answer from the options given below: [JEE Main 2025 (Online) 2nd April Evening Shift]

- (1) (A)-(III), (B)-(I), (C)-(IV), (D)-(II)
- (2) (A)-(III), (B)-(IV), (C)-(II), (D)-(I)
- (3) (A)-(II), (B)-(IV), (C)-(I), (D)-(III)
- (4) (A)-(II), (B)-(III), (C)-(IV), (D)-(I)

Scan or tap for the full solution



Q.11 The steam volatile compounds among the following are :



Choose the correct answer from the options given below :

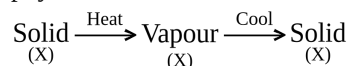
[JEE Main 2025 (Online) 29th January Morning Shift]

- (1) (B) and (D) Only
- (2) (A), (B) and (C) Only
- (3) (A) and (B) Only
- (4) (A) and (C) Only

Scan or tap for the full solution



Q.12 The purification method based on the following physical transformation is :



[JEE Main 2025 (Online) 28th January Evening Shift]

- (1) Extraction
- (2) Crystallization
- (3) Distillation
- (4) Sublimation

Scan or tap for the full solution



ANSWER KEY

Ques.	1	2	3	4	5	6	7	8	9	10	11
Ans.	3	4	1	2	4	3	1	1	1	1	3
Ques.	12										
Ans.	4										