

JEE MAIN AMINES — PYQS

Max. Marks: 160

Questions: 40

Section A (MCQ) — 34 questions

Q.1 Which statements are True?

- A. In Hoffmann bromamide degradation, 4 moles of NaOH and 2 moles of Br₂ are consumed per mole of an amide
- B. Hoffmann bromamide reaction is not given by alkyl amides.
- C. Primary amines can be synthesized by Hoffmann bromamide degradation.
- D. Secondary amide on reaction with Br₂ and NaOH will give secondary amine.
- E. The by-products of Hoffmann degradation are Na₂CO₃, NaBr and H₂O.

Choose the correct answer from the options given below : [JEE Main 2026 (Online) 8th April Evening Shift]

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

Scan or tap for the full solution



Q.2 Arrange the following compounds according to increasing order of boiling points. n-C₄H₉OH (A), n-C₄H₉NH₂ (B), n-C₄H₁₀ (C) and C₂H₅NHC₂H₅ (D).

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

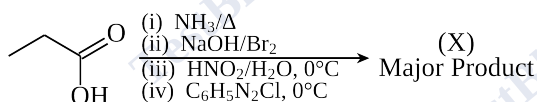
- (1) C < B < A < D (2) D < C < B < A
(3) C < D < B < A (4) D < B < A < C

Scan or tap for the full solution



Q.3 Consider the following organic reaction sequence. Choose the final product (X) from the following (consider the major product in all intermediate reactions)

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



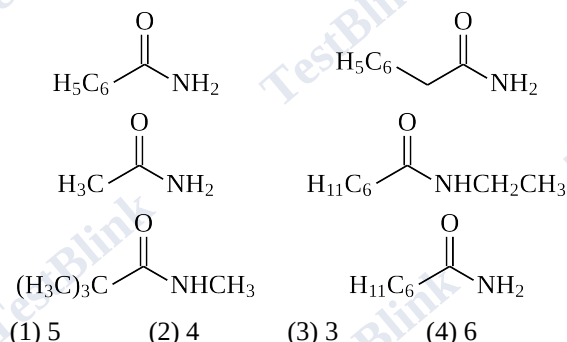
- (1) Benzene (2) Phenol
(3) Propanol (4) Chlorobenzene

Scan or tap for the full solution



Q.4 The number of compounds from the following which can undergo reaction with Br₂/KOH (alcoholic) to give respective products and these respective products can also be obtained separately by Gabriel phthalimide reaction is :

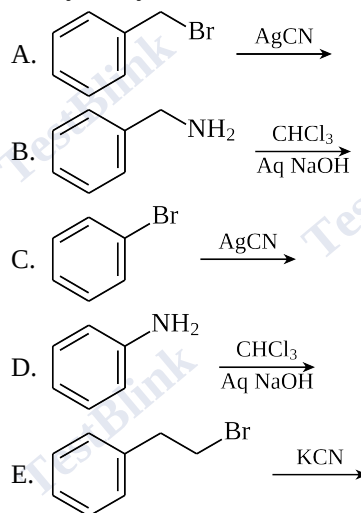
[JEE Main 2026 (Online) 6th April Evening Shift]



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Q.5 Benzyl isocyanide can be obtained from



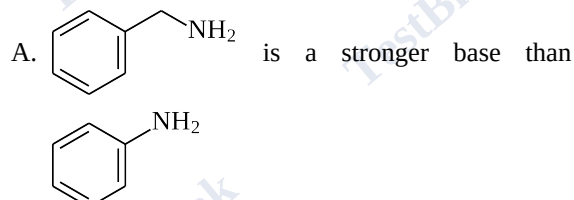
Choose the correct answer from the options given below : [JEE Main 2026 (Online) 5th April Morning Shift]

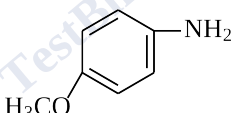
- (1) A and B Only (2) A and C Only
(3) B and D Only (4) D and E Only

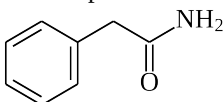
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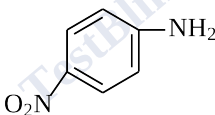


Q.6 Identify the **incorrect** statements.



B.  can be synthesized by Gabriel phthalimide synthesis.

C.  $\xrightarrow{\text{Br}_2, \text{NaOH}}$ primary aromatic amine

D.  $\xrightarrow[\text{(ii) } \Delta]{\text{(i) NaNO}_2, \text{HCl, } 0^\circ\text{C}}$ product will dissolve in NaOH

Choose the correct answer from the options given below: [JEE Main 2026 (Online) 5th April Morning Shift]

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

Scan or tap for the full solution



Q.7 Given below are two statements :

Statement-I: Heating benzamide with bromine in an ethanolic solution of sodium hydroxide will give benzylamine.

Statement-II: Nitration of aniline with $\text{HNO}_3/\text{H}_2\text{SO}_4$ at 288 K produces m-nitroaniline in higher amount than o-nitroaniline (pH adjusted).

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

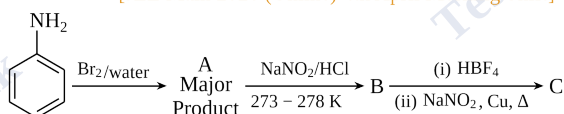
[JEE Main 2026 (Online) 5th April Evening Shift]

- (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.8 Product C of the following reaction sequence will be [JEE Main 2026 (Online) 4th April Morning Shift]



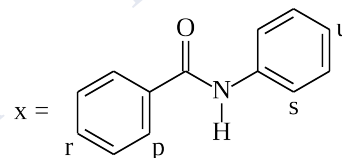
- (1) 1-Bromo-4-nitrobenzene
(2) 1, 3, 5-Tribromo-2-nitrobenzene
(3) 4-Bromo-1-nitrobenzene
(4) 1, 3, 5-Tribromobenzene

Scan or tap for the full solution



Q.9 For the given molecule, "x", the preferred site for the attack of the electrophile is :

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

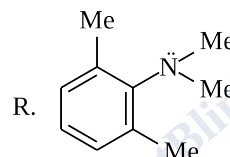


- (1) Predominantly at "r" (2) "r" and "u"
(3) "p" and "s" (4) Predominantly at "u"

Scan or tap for the full solution

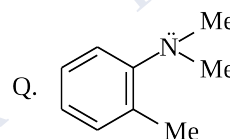
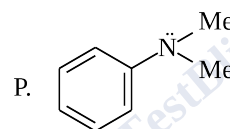


Q.10 Consider the three aromatic molecules (P, Q and R) whose structures have been given below :



The correct order regarding the reactivity of these compounds with $\text{Ph}-\text{N} \equiv \text{N} \text{Cl}^\ominus$ under optimum but slightly acidic medium is :

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



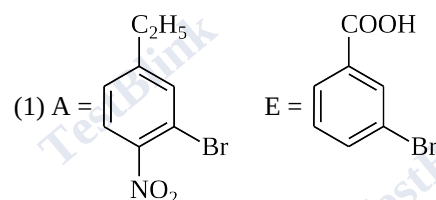
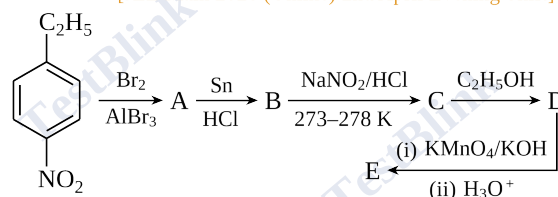
- (1) $P > Q > R$ (2) $R > P > Q$
(3) $R > Q > P$ (4) $P > R > Q$

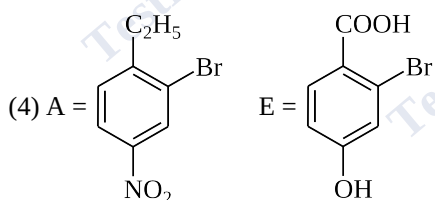
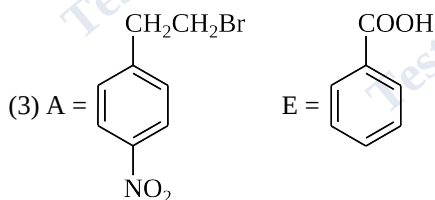
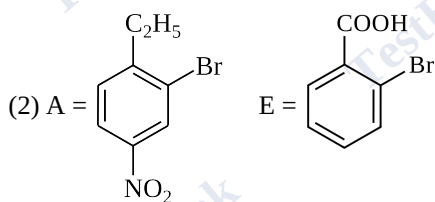
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Q.11 Identify compounds A and E in the following reaction sequence.

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



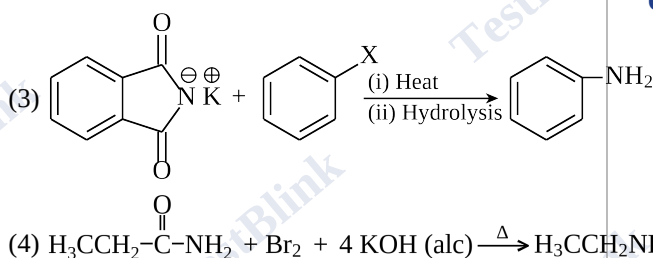
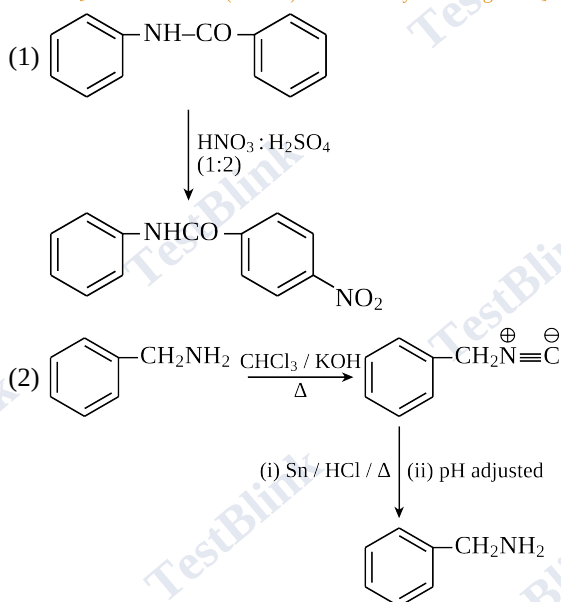


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Q.12 Consider the following reactions giving major product. Identify the correct reaction.

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



Scan or tap for the full solution



Q.13 A student performed analysis of an aliphatic organic compound 'X' which on analysis gave C = 61.01%, H = 15.25%, N = 23.74%.

This compound, on treatment with $\text{HNO}_2/\text{H}_2\text{O}$, produced another compound 'Y' which did not contain any nitrogen atom. However, the compound 'Y' upon controlled oxidation produced another compound 'Z' that responded to iodoform test.

The structure of 'X' is :

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

- (1) $\text{CH}_3\text{CH}_2\text{CH}(\text{NH}_2)\text{CH}_3$
- (2) $\text{CH}_3\text{CH}_2\text{CH}_2\text{NH}_2$
- (3) $\text{Ph}-\text{CH}(\text{CH}_3)-\text{NH}_2$
- (4) $\begin{matrix} \text{CH}_3 \\ \text{CH}_3 \end{matrix} \text{CH}-\text{NH}_2$

Scan or tap for the full solution



Q.14 Total number of alkali-insoluble solid sulphonamides obtained by reaction of given amines with Hinsberg's reagent is _____.

Aniline, N-Methylaniline, Methanamine, N,N-Dimethylmethanamine, N-Methylmethanamine, Phenylmethanamine, N-Propylaniline, N-Phenylaniline, N,N-Dimethylaniline, Allylamine, Isopropylamine

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

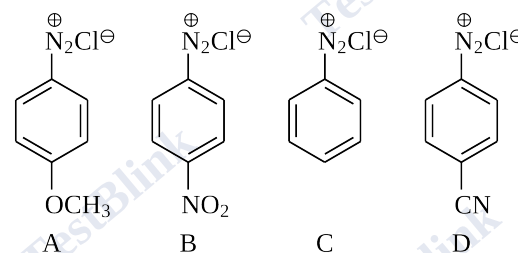
- (1) 8
- (2) 5
- (3) 2
- (4) 4

Scan or tap for the full solution



Q.15 The correct stability order of the following diazonium salts is

[JEE Main 2026 (Online) 24th January Morning Shift]



- (1) $\text{C} > \text{D} > \text{B} > \text{A}$
- (2) $\text{A} > \text{C} > \text{D} > \text{B}$
- (3) $\text{A} > \text{B} > \text{C} > \text{D}$
- (4) $\text{C} > \text{A} > \text{D} > \text{B}$

Scan or tap for the full solution



Q.16 Given below are two statements :

Statement-I: The dipole moment of $\text{R}-\text{CN}$ is greater than $\text{R}-\text{NC}$ and $\text{R}-\text{NC}$ can undergo hydrolysis under acidic medium to produce $\text{R}-\text{C}-\text{OH}$.

Statement-II: $\text{R}-\text{CN}$ hydrolyses under acidic medium to produce a compound which on treatment with SOCl_2 , followed by the addition of NH_3 gives another compound (x). This compound (x) on

treatment with NaOCl/NaOH gives a product, that on treatment with $\text{CHCl}_3/\text{KOH}/\Delta$ produces $\text{R}-\text{NC}$.

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

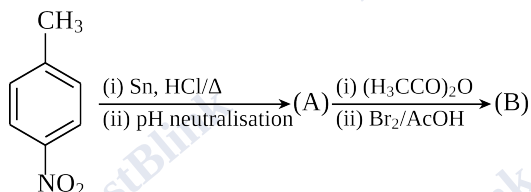
[JEE Main 2026 (Online) 24th January Evening Shift]

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

Scan or tap for the full solution



Q.17 Consider the following sequence of reactions.



4-Nitrotoluene

Assuming that the reaction proceeds to completion, then 137 mg of 4-nitrotoluene will produce ____ mg of B.

(Given molar mass in g mol^{-1} H : 1, C : 12, N : 14, O : 16, Br : 80)

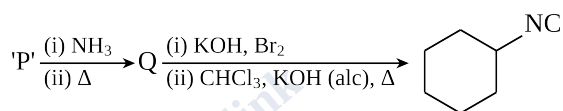
[JEE Main 2026 (Online) 23rd January Morning Shift]

- (1) 208
- (2) 228
- (3) 146
- (4) 301

Scan or tap for the full solution



Q.18 Compound 'P' undergoes the following sequence of reactions :



'P' is :

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

- (1)
- (2)
- (3)
- (4)

Scan or tap for the full solution



Q.19 Given below are two statements :

Statement-I: can be synthesized

from using simpler

reagents in the order i) Acidic KMnO_4 , ii) Ammonia, iii) Bromine and alkali

Statement-II: can be converted into

using reagents in the order i)

Bromine- H_2O ii) NaNO_2/HCl ($0 - 5^\circ\text{C}$) (iii) Aq. H_3PO_2 .

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

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

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

Scan or tap for the full solution



Q.20 A student has been given a compound 'x' of molecular formula $\text{C}_6\text{H}_7\text{N}$. 'x' is sparingly soluble in water. However, on addition of dilute mineral acid, 'x' becomes soluble in water. 'x' when treated with CHCl_3 and KOH(alc) , 'y' is produced. 'y' has a specific unpleasant smell. On treatment with benzenesulphonyl chloride, 'x' gives a compound 'z' which is soluble in alkali. The number of different "H" atoms present in 'z' is :

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

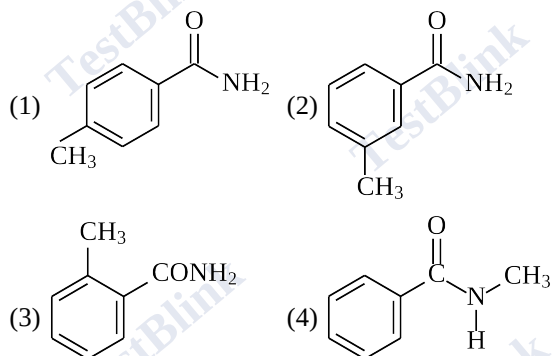
- (1) 8
- (2) 4
- (3) 5
- (4) 7

Scan or tap for the full solution



Q.21 'A' is a neutral organic compound (M.F. : $\text{C}_8\text{H}_9\text{ON}$). On treatment with aqueous $\text{Br}_2/\text{HO}^\ominus$, 'A' forms a compound 'B' which is soluble in dilute acid. 'B' on treatment with aqueous NaNO_2/HCl ($0-5^\circ\text{C}$) produces a compound 'C' which on treatment with CuCN/NaCN produces 'D'. Hydrolysis of 'D' produces 'E' which is also obtainable from the hydrolysis of 'A'. 'E' on treatment with acidified KMnO_4 produces 'F'. 'F' contains two different types of hydrogen atoms. The structure of 'A' is

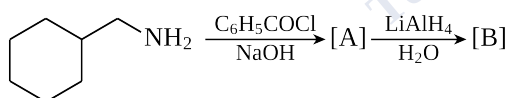
[JEE Main 2026 (Online) 22nd January Morning Shift]



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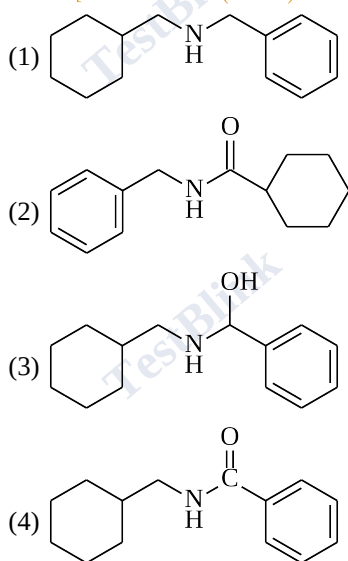


Q.22



The final product [B] is :

[JEE Main 2026 (Online) 22nd January Evening Shift]



Scan or tap for the full solution



Q.23 An organic compound (P) on treatment with aqueous ammonia under hot condition forms compound (Q) which on heating with Br_2 and KOH forms compound (R) having molecular formula $\text{C}_6\text{H}_7\text{N}$. Names of P, Q and R respectively are.

[JEE Main 2026 (Online) 21st January Morning Shift]

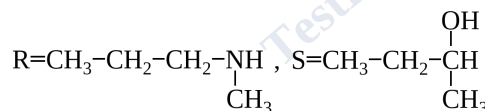
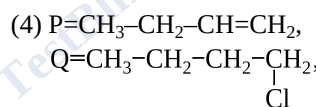
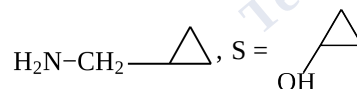
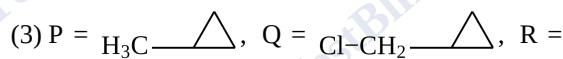
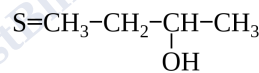
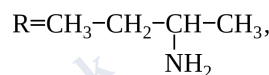
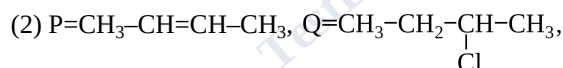
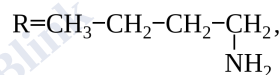
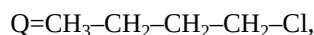
- (1) Toluic acid, methylbenzamide, 2-methylaniline
- (2) Benzoic acid, benzamide, aniline
- (3) Benzoic acid, 4-methylbenzamide, 4-methylaniline
- (4) Phenylethanoic acid, phenylethanamide, benzamine

Scan or tap for the full solution



Q.24 A hydrocarbon 'P' (C_4H_8) on reaction with HCl gives an optically active compound 'Q' ($\text{C}_4\text{H}_9\text{Cl}$) which on reaction with one mole of ammonia gives compound 'R' ($\text{C}_4\text{H}_{11}\text{N}$). 'R' on diazotization followed by hydrolysis gives 'S'. Identify P, Q, R and S.

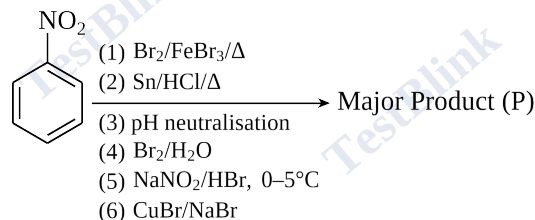
[JEE Main 2026 (Online) 21st January Morning Shift]



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Q.25



Consider the above sequence of reactions. The number of bromine atom(s) in the final product (P) will be :

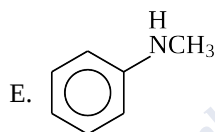
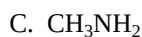
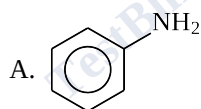
[JEE Main 2026 (Online) 21st January Evening Shift]

- (1) 6 (2) 5 (3) 1 (4) 3

Scan or tap for the full solution



Q.26 Which of the following amine(s) show(s) positive carbylamine test?



Choose the correct answer from the options given below: [JEE Main 2025 (Online) 7th April Morning Shift]

(1) C Only

(2) B, C and D Only

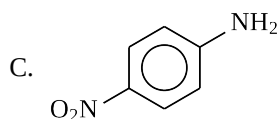
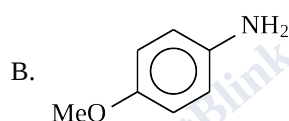
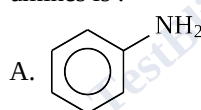
(3) A and E Only

(4) A and C Only

Scan or tap for the full solution



Q.27 The descending order of basicity of the following amines is :



Choose the correct answer from the options given below : [JEE Main 2025 (Online) 7th April Evening Shift]

(1) $\text{E} > \text{A} > \text{D} > \text{C} > \text{B}$

(2) $\text{E} > \text{D} > \text{A} > \text{B} > \text{C}$

(3) $\text{E} > \text{D} > \text{B} > \text{A} > \text{C}$

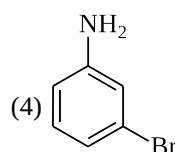
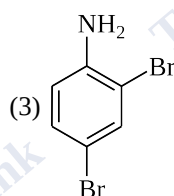
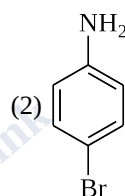
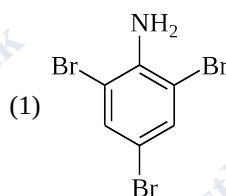
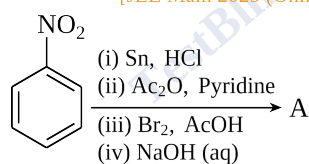
(4) $\text{B} > \text{E} > \text{D} > \text{A} > \text{C}$

Scan or tap for the full solution



Q.28 The major product (A) formed in the following reaction sequence is

[JEE Main 2025 (Online) 4th April Morning Shift]

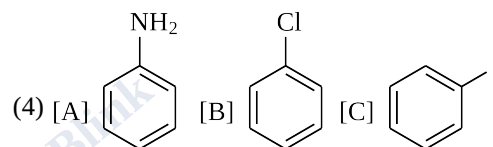
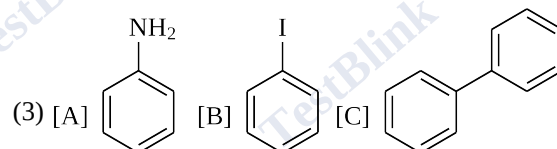
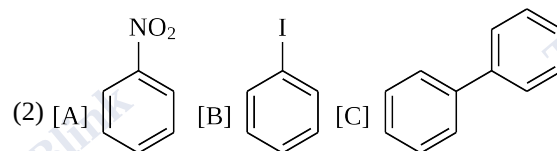
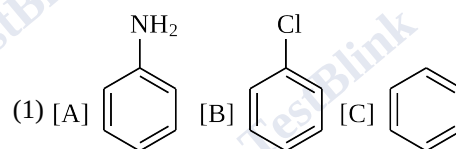
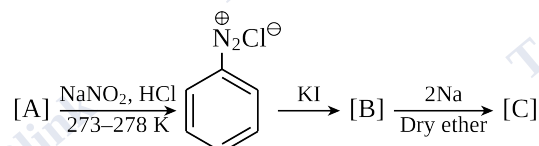


Scan or tap for the full solution



Q.29 Identify [A], [B] and [C], respectively in the following reaction sequence :

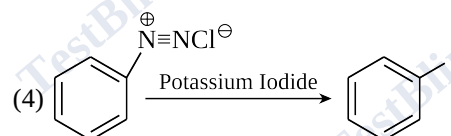
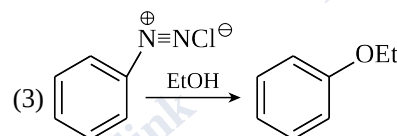
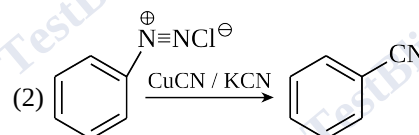
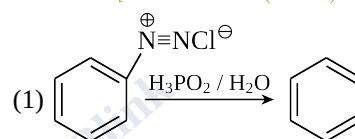
[JEE Main 2025 (Online) 3rd April Morning Shift]



Scan or tap for the full solution



Q.30 In the following reactions, which one is NOT correct? [JEE Main 2025 (Online) 3rd April Morning Shift]

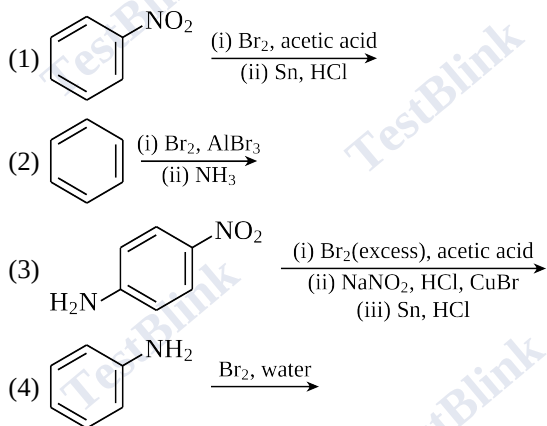


Scan or tap for the full solution



Q.31 The sequence from the following that would result in giving predominantly 3,4,5-Tribromoaniline is :

[JEE Main 2025 (Online) 3rd April Evening Shift]



Scan or tap for the full solution



Q.32 The correct order of basic nature in aqueous solution for the bases NH_3 , $\text{H}_2\text{N}-\text{NH}_2$, $\text{CH}_3\text{CH}_2\text{NH}_2$, $(\text{CH}_3\text{CH}_2)_2\text{NH}$ and $(\text{CH}_3\text{CH}_2)_3\text{N}$ is :

[JEE Main 2025 (Online) 2nd April Morning Shift]

- (1) $\text{NH}_3 < \text{H}_2\text{N}-\text{NH}_2 < (\text{CH}_3\text{CH}_2)_3\text{N} < \text{CH}_3\text{CH}_2\text{NH}_2 < (\text{CH}_3\text{CH}_2)_2\text{NH}$
 (2) $\text{H}_2\text{N}-\text{NH}_2 < \text{NH}_3 < (\text{CH}_3\text{CH}_2)_3\text{N} < \text{CH}_3\text{CH}_2\text{NH}_2 < (\text{CH}_3\text{CH}_2)_2\text{NH}$
 (3) $\text{H}_2\text{N}-\text{NH}_2 < \text{NH}_3 < \text{CH}_3\text{CH}_2\text{NH}_2 < (\text{CH}_3\text{CH}_2)_3\text{N} < (\text{CH}_3\text{CH}_2)_2\text{NH}$
 (4) $\text{NH}_3 < \text{H}_2\text{N}-\text{NH}_2 < \text{CH}_3\text{CH}_2\text{NH}_2 < (\text{CH}_3\text{CH}_2)_2\text{NH} < (\text{CH}_3\text{CH}_2)_3\text{N}$

Scan or tap for the full solution



Q.33 When a concentrated solution of sulphanilic acid and 1-naphthylamine is treated with nitrous acid (273 K) and acidified with acetic acid, the mass (g) of 0.1 mole of product formed is:
 (Given molar mass in g mol^{-1} H : 1, C : 12, N : 14, O : 16, S : 32)

[JEE Main 2025 (Online) 2nd April Evening Shift]

- (1) 330 (2) 33 (3) 343 (4) 66

Scan or tap for the full solution



Q.34 Identify correct statements :

- A. Primary amines do not give diazonium salts when treated with NaNO_2 in acidic condition.
 B. Aliphatic and aromatic primary amines on heating with CHCl_3 and ethanolic KOH form carbylamines.
 C. Secondary and tertiary amines also give carbylamine test.
 D. Benzenesulfonyl chloride is known as Hinsberg's reagent.
 E. Tertiary amines react with benzenesulfonyl chloride very easily.

Choose the **correct** answer from the options given below :

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

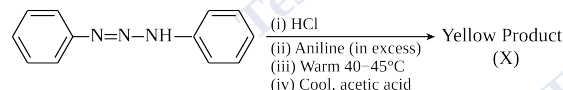
- (1) (B) and (C) only (2) (D) and (E) only
 (3) (A) and (B) only (4) (B) and (D) only

Scan or tap for the full solution



Section B (Numerical) — 6 questions

Q.35 Consider the following sequence of reactions.



The percentage of nitrogen in the yellow product (X) formed is ____%. (Nearest Integer)

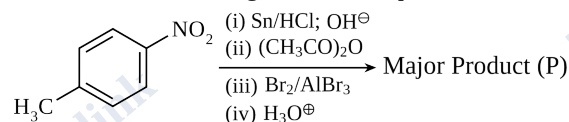
(Given Molar mass in g mol^{-1} H : 1, C : 12, N : 14)

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

Scan or tap for the full solution



Q.36 Consider the following reactions sequence



When the product (P) is subjected to Carius analysis using AgNO_3 , 1.0 g of the product (P) will produce ____ g of the precipitate of AgBr . (Nearest Integer)

(Given : molar mass in g mol^{-1} C : 12, H : 1, O : 16, N : 14, Br : 80, Ag : 108)

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

Scan or tap for the full solution



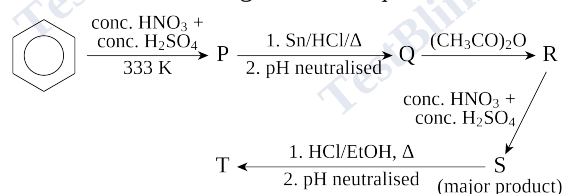
Q.37 The mass of benzanilide obtained from the benzoylation reaction of 5.8 g of aniline, if yield of product is 82%, is ____ g (nearest integer).
 (Given molar mass in g mol^{-1} H : 1, C : 12, N : 14, O : 16)

[JEE Main 2026 (Online) 22nd January Evening Shift]

Scan or tap for the full solution



Q.38 Consider the following reaction sequence



The percentage of nitrogen in product 'T' formed is ____%. (Nearest integer)

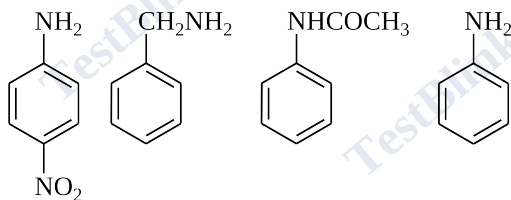
(Given molar mass in g mol^{-1} H : 1, C : 12, N : 14, O : 16)

[JEE Main 2026 (Online) 21st January Morning Shift]

Scan or tap for the full solution



Q.39 Given below are some nitrogen containing compounds :



Each of them is treated with HCl separately. 1.0 g of the most basic compound will consume _____ mg of HCl.

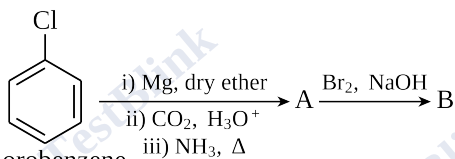
(Given molar mass in g mol^{-1} C : 12, H : 1, O : 16, Cl : 35.5)

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

Scan or tap for the full solution



Q.40 Consider the following sequence of reactions:



Chlorobenzene

11.25 mg of chlorobenzene will produce _____ $\times 10^{-1}$ mg of product B.

(Consider the reactions result in complete conversion.)

[Given molar mass of C, H, O, N and Cl as 12, 1, 16, 14 and 35.5 g mol^{-1} respectively]

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

Scan or tap for the full solution



ANSWER KEY

Section A (MCQ) — 34 questions

Ques.	1	2	3	4	5	6	7	8	9	10	11
Ans.	3	3	1	3	1	3	4	2	4	1	2
Ques.	12	13	14	15	16	17	18	19	20	21	22
Ans.	4	4	4	2	2	2	1	1	4	1	1
Ques.	23	24	25	26	27	28	29	30	31	32	33
Ans.	2	2	2	4	3	2	3	3	3	3	2
Ques.	34										
Ans.	4										

Section B (Numerical) — 6 questions

Ques.	35	36	37	38	39	40	
Ans.	21	1	10	20	341	93	