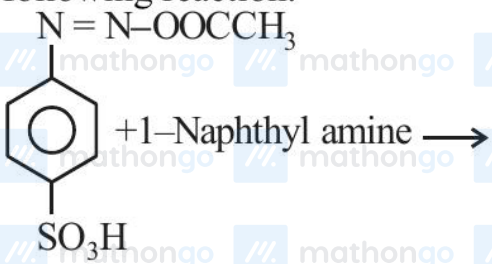
Q1 - 24 January - Shift 2

Choose the correct colour of the product for the following reaction.



(1) Yellow (2) White

(3) Red (4) Blue

Space for your notes:

Q2 - 24 January - Shift 2

Given below are two statements :

Statement I : Pure Aniline and other arylamines are usually colourless.

Statement II : Arylamines get coloured on storage due to atmospheric reduction.

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

(1) Both Statement I and Statement II are incorrect

(2) Both Statement I and Statement II are correct

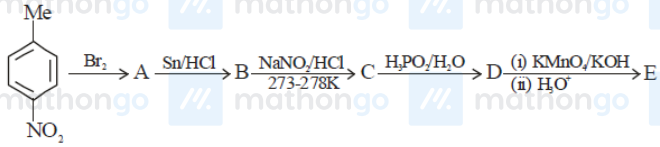
(3) Statement I is correct but Statement II is incorrect

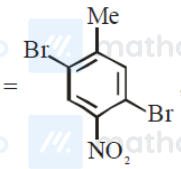
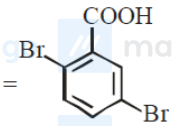
(4) Statement I is incorrect but Statement II is correct

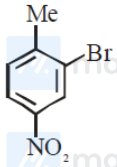
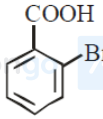
Space for your notes:

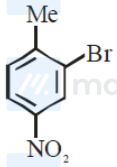
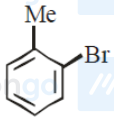
Q3 - 25 January - Shift 1

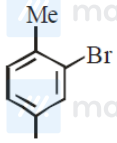
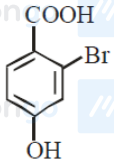
Identify the product formed (A and E)



(1) A =  , E = 

(2) A =  , E = 

(3) A =  , E = 

(4) A =  , E = 

Space for your notes:

Q4 - 25 January - Shift 1

The correct order in aqueous medium of basic strength in case of methyl substituted amines is :

(1) $Me_2NH > MeNH_2 > Me_3N > NH_3$

(2) $Me_2NH > Me_3N > MeNH_2 > NH_3$

(3) $NH_3 > Me_3N > MeNH_2 > Me_2NH$

(4) $Me_3N > Me_2NH > MeNH_2 > NH_3$

Space for your notes:

Q5 - 29 January - Shift 2

Reaction of propanamide with Br_2 / KOH (aq) produces :

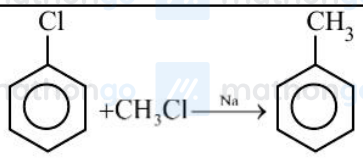
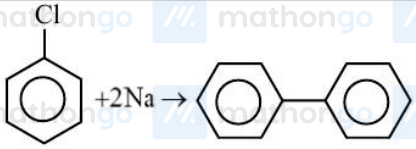
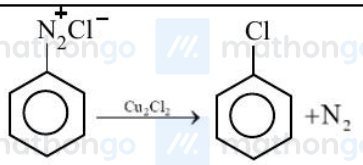
(1) Ethylnitrile (2) Propylamine

(3) Propanenitrile (4) Ethylamine

Space for your notes:

Q6 - 30 January - Shift 1

Match **List I** with **List II**

	List I		List II
A		I	Fitting reaction
B		II	Wurtz Fitting reaction
C		III	Finkelstein reaction
D	$C_2H_5Cl + NaI \rightarrow C_2H_5I + NaCl$	IV	Sandmeyer reaction

(1) A – II, B – I, C – III, D – IV

(2) A – III, B – II, C – IV, D – I

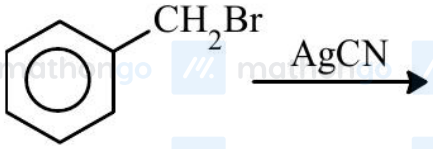
(3) A – IV, B – II, C – III, D – I

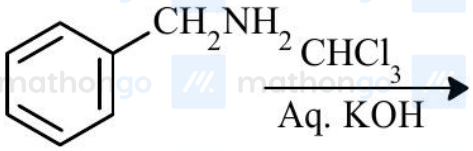
(4) A – II, B – I, C – IV, D – III

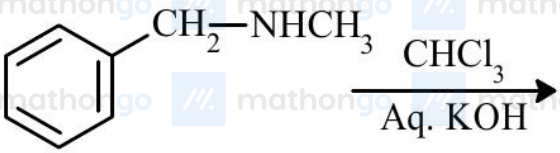
Space for your notes:

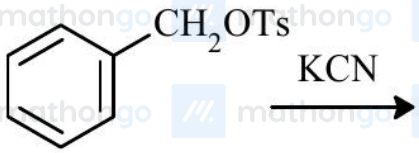
Q7 - 30 January - Shift 1

Benzyl isocyanide can be obtained by :

(A) 

(B) 

(C) 

(D) 

Choose the correct answer from the options given below :

(1) A and D

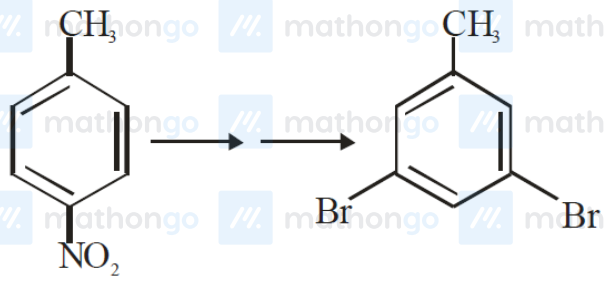
(2) Only B

(3) A and B

(4) B and C

Space for your notes:

Q8 - 30 January - Shift 2



(X) (Y)

In the above conversion of compound (X) to product (Y), the sequence of reagents to be used will be:

(1) (i) Br_2, Fe (ii) Fe, H^+ (iii) $LiAlH_4$

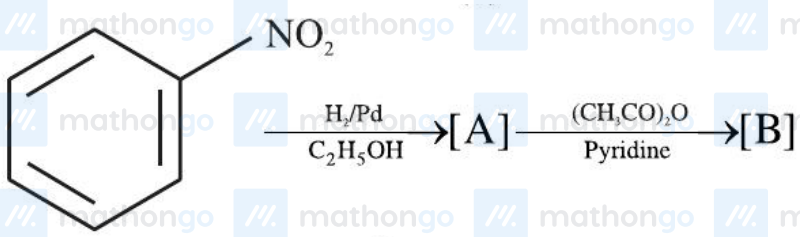
(2) (i) Br_2(aq) (ii) $LiAlH_4$ (iii) H_3O^+

(3) (i) Fe, H^+ (ii) Br_2(aq) (iii) HNO_2 (iv) CuBr

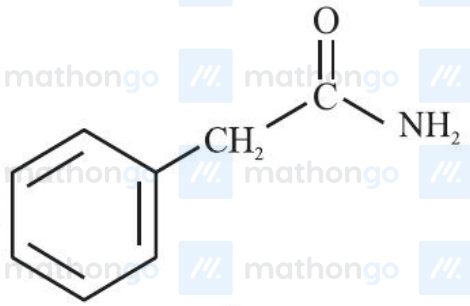
(4) (i) Fe, H^+ (ii) Br_2(aq) (iii) HNO_2 (iv) H_3PO_2

Space for your notes:

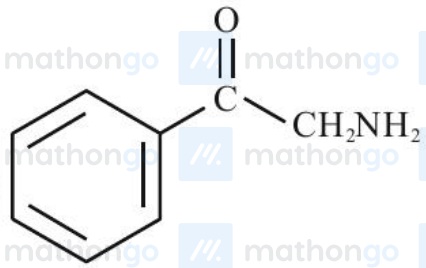
Q9 - 31 January - Shift 1



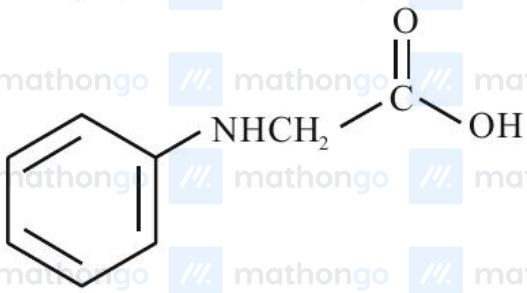
(1)



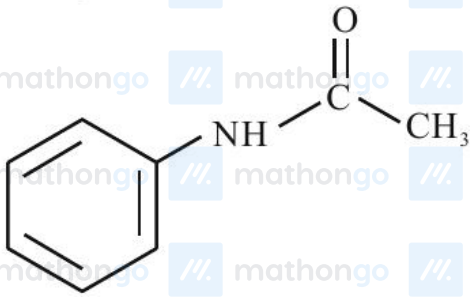
(2)



(3)



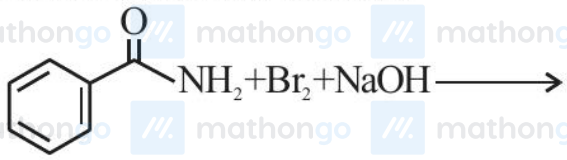
(4)

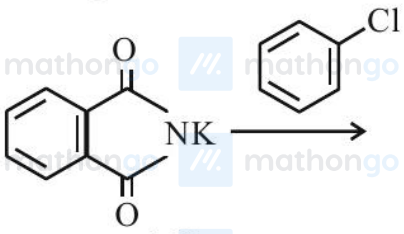


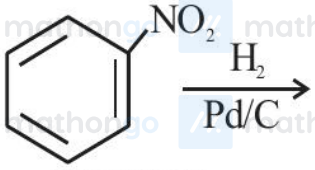
Space for your notes:

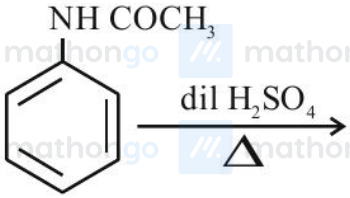
Q10 - 31 January - Shift 1

How many of the transformation given below would result in aromatic amines?

(1) 

(2) 

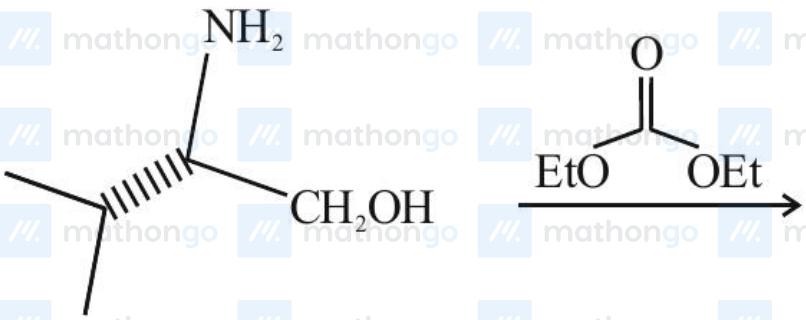
(3) 

(4) 

Space for your notes:

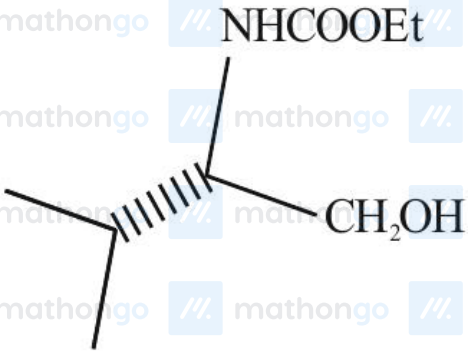
Q11 - 01 February - Shift 1

In the following reaction, 'A' is

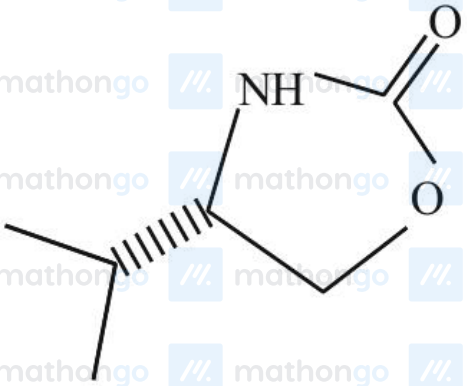


'A' Major product.

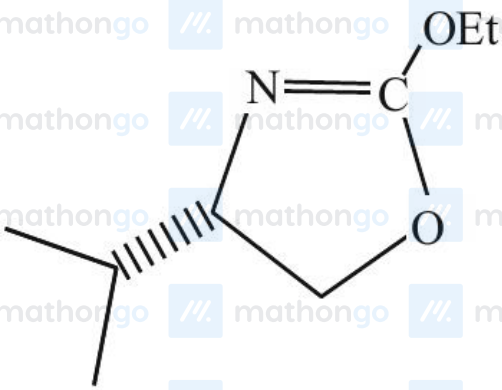
(1)

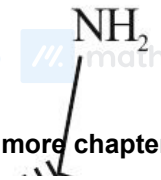


(2)

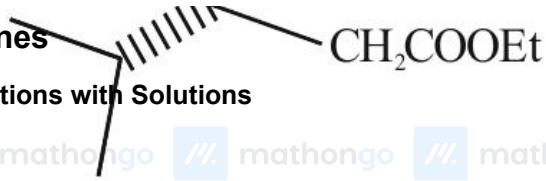


(3)





Space for your notes:



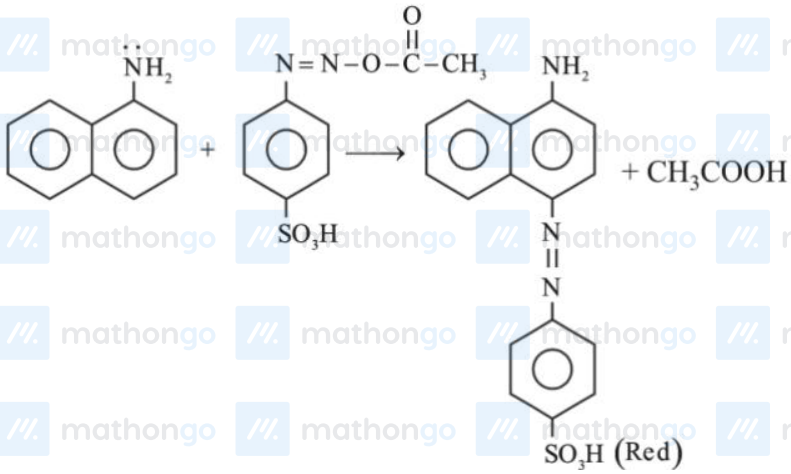
(4)

Answer Key

(As per Official NTA Key released on 2 Feb)

Q1 (3)	**Q2** (3)	**Q3** (2)	**Q4** (1)
Q5 (4)	**Q6** (4)	**Q7** (3)	**Q8** (4)
Q9 (4)	**Q10** (3)	**Q11** (2)	

Q1 (3)



Q2 (3)

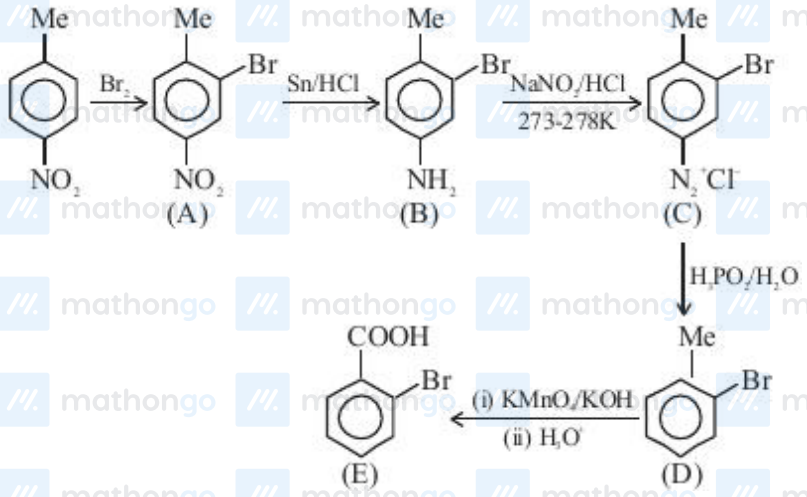
Statement – 1 is (True)

Pure aniline is colourless liquid

Statement – 2 is (False)

Aniline becomes dark brown due to action of air and light [oxidation]

Q3 (2)

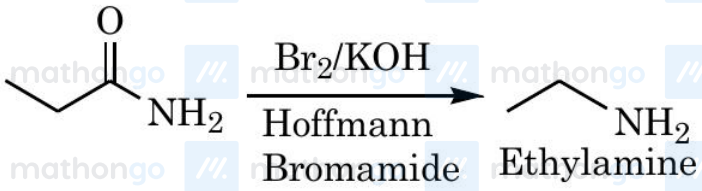


Q4 (1)

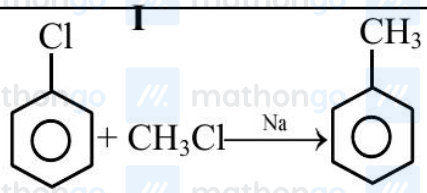
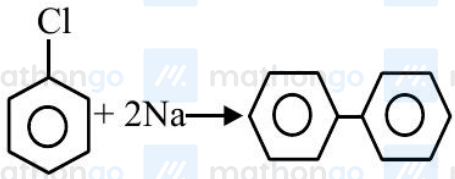
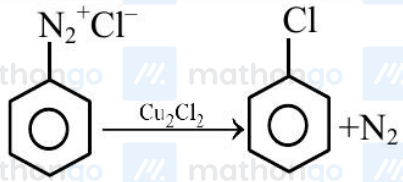
In aqueous medium basic strength is dependent on electron density on nitrogen as well as solvation of cation formed after accepting H^+. After considering all these factors overall basic strength order is

$Me_2NH > MeNH_2 > Me_3N > NH_3$

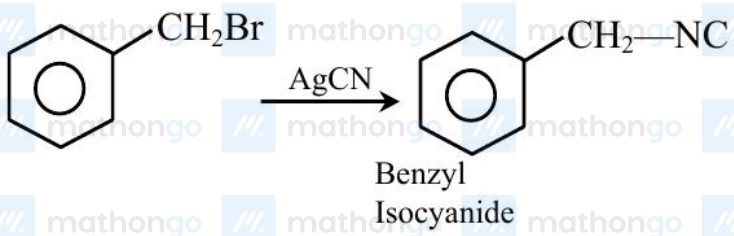
Q5 (4)

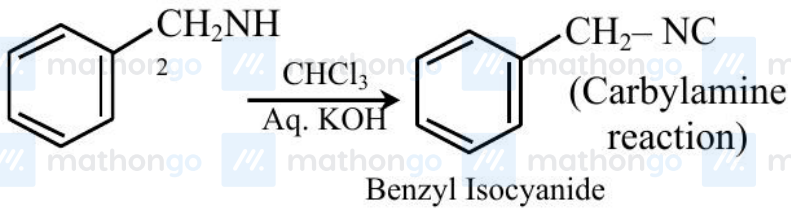


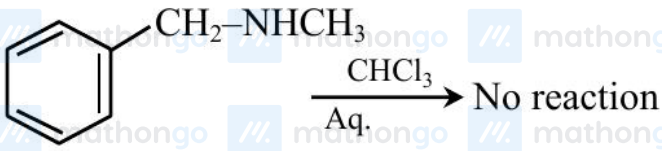
Q6 (4)

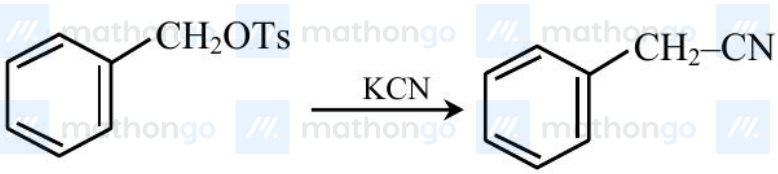
	LIST-I	LIST-II
A		Wurtz-fitting reaction
B		Fitting reaction
C		Sandmeyer reaction
D	$C_2H_5Cl + NaI \rightarrow C_2H_5I + NaCl$	Finkelstein reaction

Q7 (3)

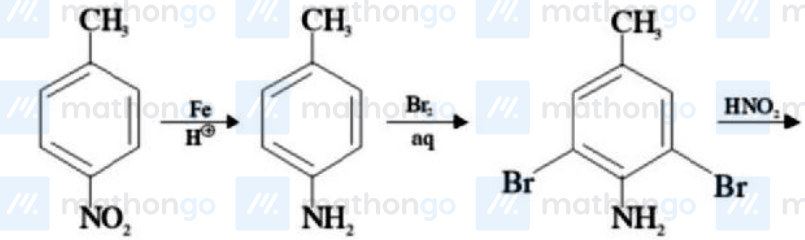

CH2Br
AgCN
CH2—NC
Benzyl
Isocyanide

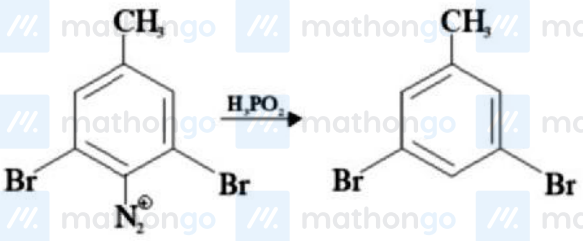

CH2NH2
CHCl3
Aq. KOH
CH2– NC
(Carbylamine
reaction)
Benzyl Isocyanide


CH2–NHCH3
CHCl3
Aq.
No reaction

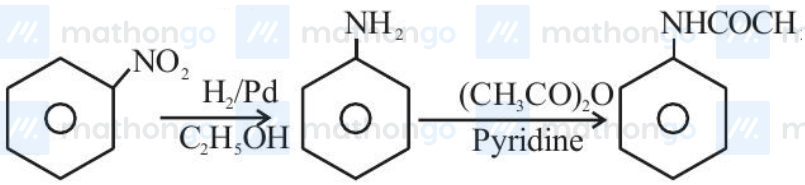

CH2OTs
KCN
CH2–CN

Q8 (4)


CH3
Fe
H⊕
Br2
aq
HNO2
NO2
NH2
Br
Br

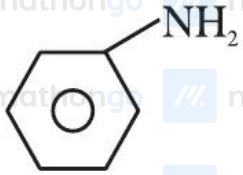

CH3
H3PO2
Br
Br
N2⊕

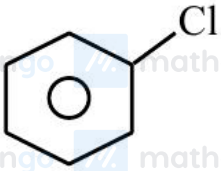
Q9 (4)

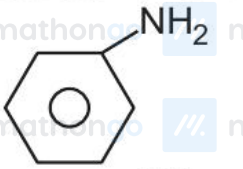

NO2
H2/Pd
C2H5OH
NH2
(CH3CO)2O
Pyridine
NHCOCH

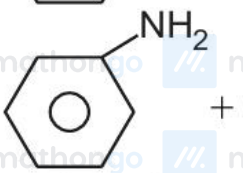
Q10 (3)

Product in the given reactions are as follow-

1. 

2. No reactions will be observed as in Gabriel phthalimide synthesis  is poor substrate for SN^2

3. 

4.  $+ CH_3COOH$

Aromatic amines will he formed in 1, 3 & 4

Ans : 3

Q11 (2)

Initially lone pair electron of $-NH_2$ attack on electrophilic carbon, after then lone pair electron of oxygen attacks leading to formation of cyclic compound.