Q1 - 2024 (01 Feb Shift 1)

Match List - I with List -II.

	List – I (Reactions)		List – II (Reagents)
(A)	$CH_3(CH_2)_5-\underset{\underset{O}{\|}}{C}-OC_2H_5 \rightarrow CH_3(CH_2)_5CHO$	(I)	CH_3MgBr, H_2O
(B)	$C_6H_5COC_6H_5 \rightarrow C_6H_5CH_2C_6H_5$	(II)	Zn(Hg) and conc. HCl
(C)	$C_6H_5CHO \rightarrow C_6H_5CH(OH)CH_3$	(III)	$NaBH_4$, H^+
(D)	$CH_3COCH_2COOC_2H_5 \rightarrow CH_3\underset{\underset{H}{\|}}{C}(OH)CH_2COOC_2H_5$	(IV)	DIBAL-H, H_2O

Choose the correct answer from options given below:

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

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

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

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

Q2 - 2024 (29 Jan Shift 1)

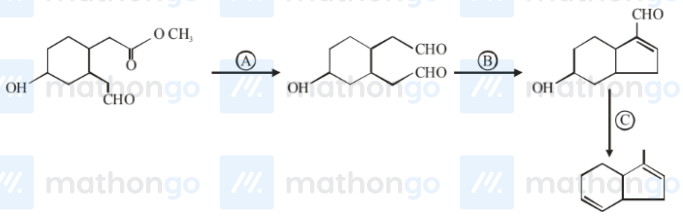
From the compounds given below, number of compounds which give positive Fehling's test is _____

Benzaldehyde, Acetaldehyde, Acetone,

Acetophenone,Methanal, 4-nitrobenzaldehyde, cyclohexane carbaldehyde.

Q3 - 2024 (29 Jan Shift 2)

Identify the reagents used for the following conversion



(1) $A = LiAlH_4,\ B = NaOH_{(aq)}, C = NH_2 - NH_2/KOH$, ethylene glycol

(2) $A = LiAlH_4,\ B = NaOH_{(alc)}, C = Zn/HCl$

(3) $A = DIBAL\text{-}H, B = NaOH_{(aq)}$,

$C = NH_2 - NH_2/KOH$, ethylene glycol

(4) $A = DIBAL - H, B = NaOH_{(alc)}, C = Zn/HCl$

Q4 - 2024 (30 Jan Shift 1)

This reduction reaction is known as:

(1) Rosenmund reduction

(2) Wolff-Kishner reduction

(3) Stephen reduction

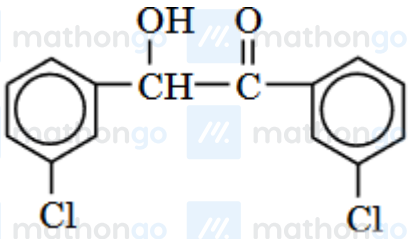
(4) Etard reduction

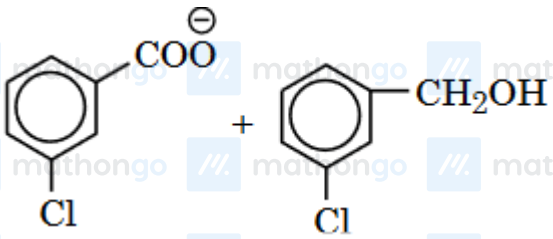
Q5 - 2024 (30 Jan Shift 1)

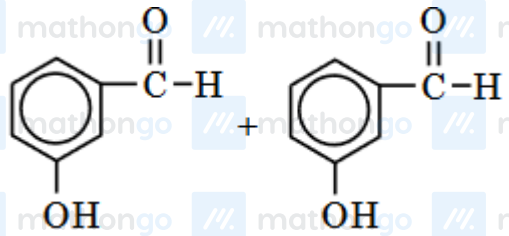
The compound formed by the reaction of ethanal with semicarbazide contains _____ number of nitrogen atoms.

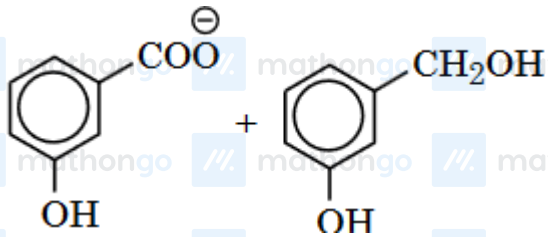
Q6 - 2024 (30 Jan Shift 2)

m-chlorobenzaldehyde on treatment with 50% KOH solution yields

(1) 

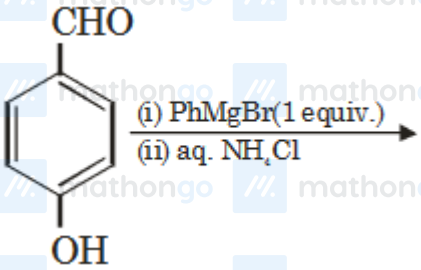
(2) 

(3) 

(4) 

Q7 - 2024 (31 Jan Shift 1)

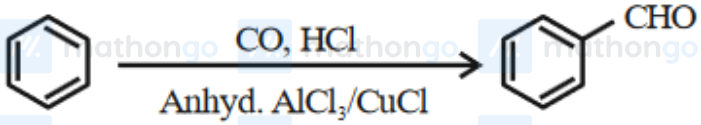
The product of the following reaction is P.



The number of hydroxyl groups present in the product P is _____.

Q8 - 2024 (31 Jan Shift 2)

Identify the name reaction.



(1) Stephen reaction

(2) Etard reaction

(3) Gatterman-koch reaction

(4) Rosenmund reduction

Answer Key

Q1 (2) **Q2** (3) **Q3** (4) **Q4** (1)

Q5 (3) **Q6** (2) **Q7** (0) **Q8** (3)

Q1

$$CH_3(CH_2)_5COOC_2H_5 \xrightarrow{\text{DIBAL-H, } H_2O} CH_3(CH_2)_5CHO$$

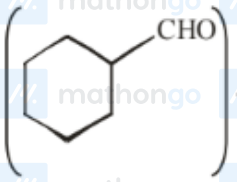
$$C_6H_5COC_6H_5 \xrightarrow{Zn(Hg) \text{ \& conc. HCl}} C_6H_5CH_2C_6H_5$$

$$C_6H_5CHO \xrightarrow[H_2O]{CH_3MgBr} C_6H_5CH(OH)CH_3$$

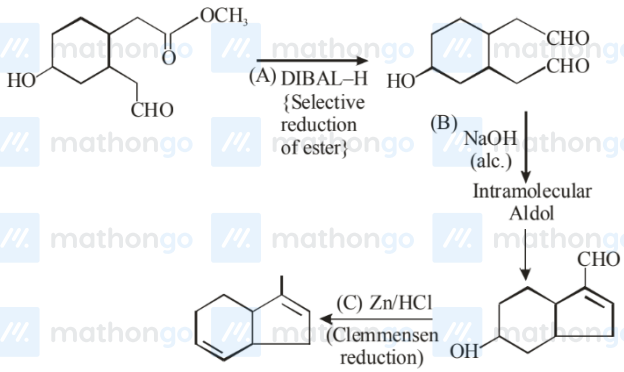
$$CH_3COCH_2COOC_2H_5 \xrightarrow{NaBH_4, H^+} CH_3CH(OH)CH_2COOC_2H_5$$

Q2

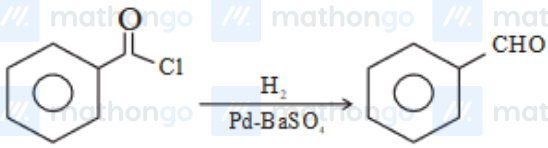
Acetaldehyde (CH_3CHO), Methanal $(HCHO)$, and cyclohexane carbaldehyde



Q3



Q4



It is known as rosenmund reduction that is the partial reduction of acid chloride to aldehyde

Q5

[original image]

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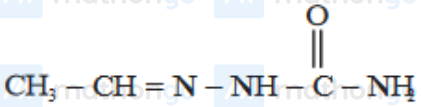
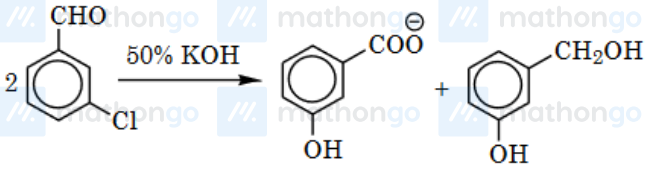


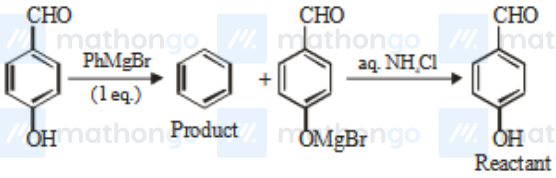
Q6

Meta-chlorobenzaldehyde will undergo Cannizzaro reaction with 50%KOH to give m− chlorobenzoate ion and m-chlorobenzyl alcohol.

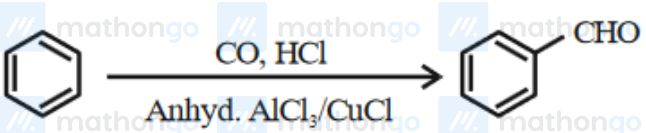


Q7

Product benzene has zero hydroxyl group



Q8



Gatterman-Koch reaction