## Sinha Sir, Kota

Which one of the following reactions does not occur?

$$(1) \bigcirc +HNO_3/H_2SO_4 \longrightarrow \bigcirc \\ NH_2 \\ +(CH_3CO)_2O/Pyridine \longrightarrow \bigcirc \\ NH_2 \\ NH_2 \\ (3) \bigcirc +AICI_3 + CH_3CI \longrightarrow \bigcirc \\ CH_3$$

$$(2) \bigcirc +(CH_3CO)_2O/Pyridine \longrightarrow \bigcirc \\ NH_2 \\ NH_2 \\ (4) \bigcirc +H_2SO_4 \longrightarrow \bigcirc \\ SO_3H$$

## Sinha Sir, Kota

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$$(1) \bigcirc +HNO_3/H_2SO_4 \longrightarrow \bigcirc \\ NH_2 \\ NO_2 \\ NH_2 \\ NH_2 \\ NH_2 \\ NH_2 \\ NH_2 \\ (3) \bigcirc +AICI_3 + CH_3CI \longrightarrow \bigcirc \\ CH_3 \\ (4) \bigcirc +H_2SO_4 \longrightarrow \bigcirc \\ SO_3H$$

$$(2) \bigcirc +(CH_3CO)_2O/Pyridine \longrightarrow \bigcirc \\ NH_2 \\ NH_3 \\ NH_2 \\ NH_3 \\ NH_3 \\ NH_3 \\ NH_3 \\ NH_3 \\ NH_3 \\ NH_4 \\ NH_3 \\ NH_3 \\ NH_4 \\ NH_4 \\ NH_4 \\ NH_5 \\$$

Ans = 3 FCR does not takes place at aniline or phenol.

# Sinha Sir, Kota

The major product of the following reaction is:

$$(1) \begin{picture}(200,0){\line(1,0){1300}} \put(0.5,0){\line(1,0){1300}} \put(0.5,0){\$$

## Sinha Sir, Kota

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$$(1) \begin{picture}(200,0){\line(1,0){1300}} \put(0.5,0){\line(1,0){1300}} \put(0.5,0){\$$

Ans = 3 FCR at para followed by intramolecular cyclization.

## Sinha Sir, Kota

The major product of the following reaction is:

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# Sinha Sir, Kota

What will be the major product in the following mononitration reaction?

$$(1) \begin{array}{c} & & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & \\ & & & \\$$

# Sinha Sir, Kota

What will be the major product in the following mononitration reaction?

$$(1) \begin{array}{c} & & & \\$$

Ans = 3
At activated ring, at para position.

## Sinha Sir, Kota

The major product of the following reaction is : निम्न अभिक्रिया का मुख्य उत्पाद है :

## Sinha Sir, Kota

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The major product of the following reactions is:

## Sinha Sir, Kota

The major product of the following reactions is:

FCR at para to -OMe group.

# Sinha Sir, Kota

What is the correct sequence of reagents used for converting nitrobenzene into m-dibromobenzene?

(1) 
$$\xrightarrow{Br_2/Fe}$$
 /  $\xrightarrow{Sn/HCl}$  /  $\xrightarrow{NaNO_2/HCl}$  /  $\xrightarrow{CuBr/HBr}$  (2)  $\xrightarrow{Sn/HCl}$  /  $\xrightarrow{KBr}$  /  $\xrightarrow{Br_2}$  /  $\xrightarrow{H^+}$  (3)  $\xrightarrow{Sn/HCl}$  /  $\xrightarrow{Br_2}$  /  $\xrightarrow{NaNO_2}$  /  $\xrightarrow{NaNO_2}$  /  $\xrightarrow{NaNO_2}$  /  $\xrightarrow{H^+}$  (4)  $\xrightarrow{NaNO_2}$  /  $\xrightarrow{HCl}$  /  $\xrightarrow{KBr}$  /  $\xrightarrow{KBr}$  /  $\xrightarrow{H^+}$ 

# Sinha Sir, Kota

What is the correct sequence of reagents used for converting nitrobenzene into m-dibromobenzene?

## Sinha Sir, Kota

Correct statement about the given chemical reaction is:

- (1)  $-\ddot{N}H_2$  group is *ortho* and *para* directive, so product (B) is not possible.
- (2) The reaction will form sulphonated product instead of nitration.
- (3) Reaction is possible and compound (A) will be major product.
- (4) Reaction is possible and compound (B) will be the major product.

## Sinha Sir, Kota

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- (3) Reaction is possible and compound (A) will be major product.
- (4) Reaction is possible and compound (B) will be the major product.

Ans = 3

P major(54%), meta minor(44%), ortho least 2% approx

# Sinha Sir, Kota

$$\frac{Br_2}{AIBr_3(C_2H_5)_2O} \xrightarrow{\text{'A'}} \text{(Major Product)}$$

Consider the given reaction the product A is:

# Sinha Sir, Kota

$$\frac{Br_2}{AIBr_3(C_2H_5)_2O} \xrightarrow{\text{'A'}} \text{(Major Product)}$$

Consider the given reaction the product A is:

Ans = 1

.

## Sinha Sir, Kota

The major product of the following reaction is:

$$(i) \frac{\text{KMnO}_4 / \text{KOH}, \Delta}{\text{(ii) H}_2 \text{SO}_4 (\text{dil})}$$

$$(1) \qquad \qquad (2) \qquad \qquad \text{COCOOH}$$

$$(3) \qquad \qquad (4) \qquad \qquad \text{HOOC}$$

## Sinha Sir, Kota

The major product of the following reaction is:

COCH<sub>3</sub>

$$(i) \text{ KMnO}_4/\text{KOH}, \Delta$$

$$(ii) \text{ H}_2\text{SO}_4(\text{dil})$$

$$(1) \text{ COCH}_3$$

$$(2) \text{ OHC}$$

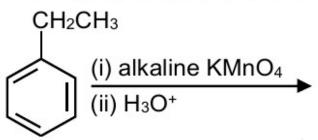
$$(3) \text{ HOOC}$$

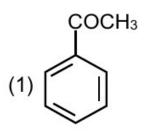
$$(4) \text{ HOOC}$$

Ans = 3
At benzylic position , Ketone is also oxidised.

Sinha Sir, Kota

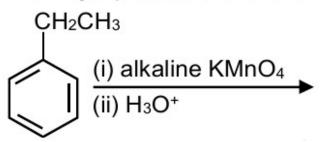
The major product of the following reaction is:

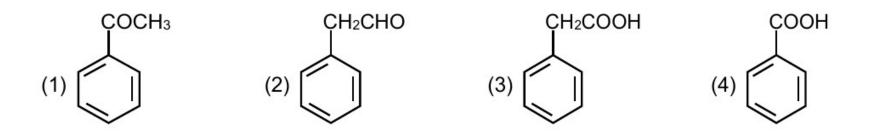




Sinha Sir, Kota

The major product of the following reaction is:



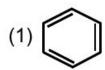


Ans = 4
At benzylic position oxidation takes place

Sinha Sir, Kota

Identify A in the given chemical reaction :

CH<sub>3</sub> CH<sub>3</sub> I CH<sub>2</sub>—CH<sub>2</sub>—CH<sub>2</sub>—CH<sub>2</sub>—CH<sub>3</sub> 
$$\xrightarrow{\text{Mo}_2O_3}$$
 'A' major product  $\xrightarrow{\text{10}_2O_3}$  atm



## Sinha Sir, Kota

Considering the above reaction, the major product among the following is:

$$(1) \begin{array}{c} CH_2CH_3 \\ (2) \end{array} \begin{array}{c} CH_3 \\ (2) \end{array} \begin{array}{c} CH_3 \\ (3) \end{array} \begin{array}{c} CH_2CH_2CH_3 \\ (4) \end{array} \begin{array}{c} COCH_2CH_3 \\ (4) \end{array}$$

## Sinha Sir, Kota

$$\frac{1) \text{Zn /HCI}}{2) \text{ Cr}_2\text{O}_3,773 \text{ K}} : \\
10 - 20 \text{ atm}$$

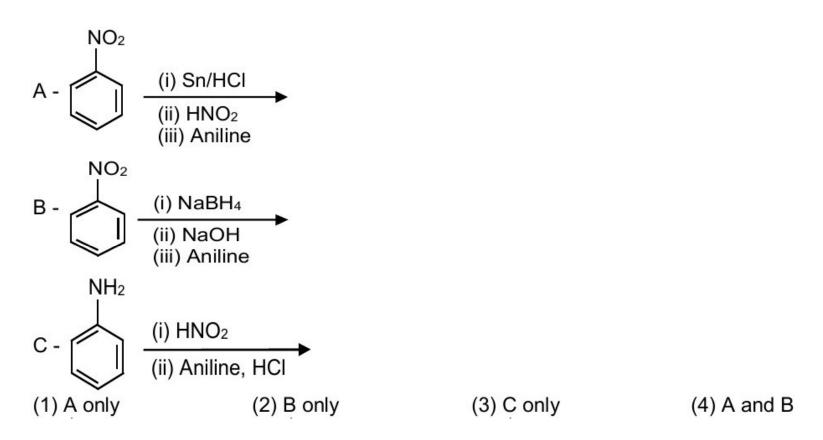
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$$(1) \begin{array}{c} CH_2CH_3 \\ (2) \end{array} \begin{array}{c} CH_3 \\ (2) \end{array} \begin{array}{c} CH_3 \\ (3) \end{array} \begin{array}{c} CH_2CH_2CH_3 \\ (4) \end{array} \begin{array}{c} COCH_2CH_3 \\ (4) \end{array}$$

Ans = 2 Reduction folloewd by aromatization

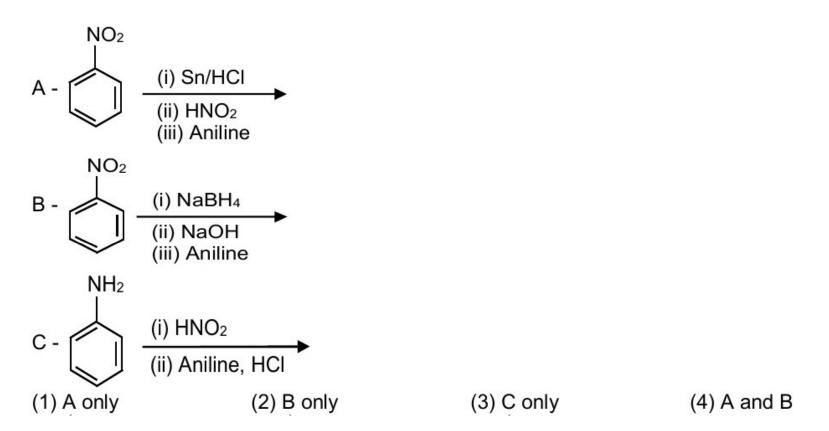
# Sinha Sir, Kota

In which of the following reaction/s will not give p-aminoazobenzene?



## Sinha Sir, Kota

In which of the following reaction/s will not give p-aminoazobenzene?



Ans = 4
Aniline in acidic medium form Azo dye.

# Sinha Sir, Kota

$$CH_3$$
 $\xrightarrow{"A"}$ 
 $OCH_3$ 
 $COOH$ 

In the above reaction, the reagent "A" is

(1) LiAlH<sub>4</sub>

- (2) HCI, Zn-Hg
- (3) Alkaline KMnO<sub>4</sub>, H<sup>+</sup> (4) NaBH<sub>4</sub>, H<sub>3</sub>O<sup>+</sup>

# Sinha Sir, Kota

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Ans = 3

# Sinha Sir, Kota

Reaction of Grignard reagent, C<sub>2</sub>H<sub>5</sub>MgBr with C<sub>8</sub>H<sub>8</sub>O followed by hydrolysis gives compound "A" which reacts instantly with Lucas reagent to given compound B, C<sub>10</sub>H<sub>13</sub>Cl. The compound B is"

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Ans = 3
3 degree alcohol at benzylic position

# Sinha Sir, Kota

Identify A in the following reaction.

$$\begin{array}{c}
 & \stackrel{\mathsf{NH}_2}{\longrightarrow} \\
 & \stackrel{\mathsf{K}_2\mathsf{Cr}_2\mathsf{O}_7}{\longrightarrow} \mathsf{A}
\end{array}$$

$$\begin{array}{c}
 & \mathsf{NH}_2\\
 & \mathsf{NH}_2
\end{array}$$

## Sinha Sir, Kota

Identify A in the following reaction.

$$\begin{array}{c}
 & \stackrel{\mathsf{NH}_2}{\longrightarrow} \\
 & \stackrel{\mathsf{K}_2\mathsf{Cr}_2\mathsf{O}_7}{\longrightarrow} \mathsf{A}
\end{array}$$

$$\begin{array}{c}
 & \mathsf{NH}_2\\
 & \mathsf{NH}_2
\end{array}$$

Ans = 2
Oxidation of aniline with acidified potassium dichromate gives **p-benzoquinone**.