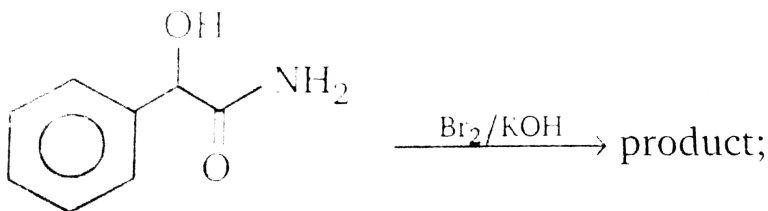


CHEMISTRY

BOOKS - MS CHOUHAN CHEMISTRY (HINGLISH)

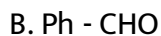
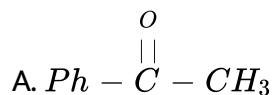
CARBENE AND NITRENE

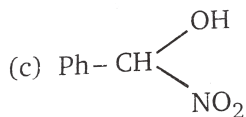
Exercise



1.

Product of this Hoffmann bromamide reaction is :





C.

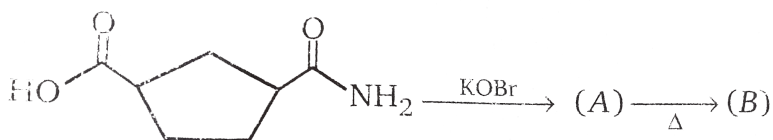


Answer: B

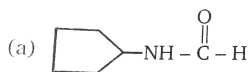
 **Watch Video Solution**

2.

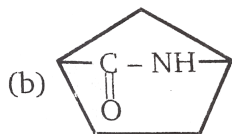
Compound



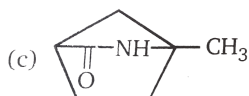
(B) is :



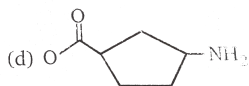
A.



B.



C.



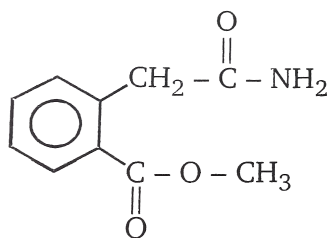
D.

Answer: B



Watch Video Solution

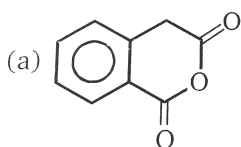
3.



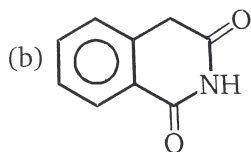
$\xrightarrow{\text{KOB}r}$ (A); Product (A) is :

Product (A)

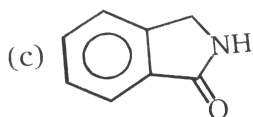
is :



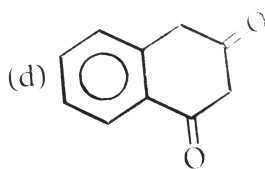
A.



B.



C.



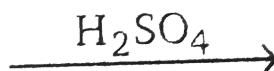
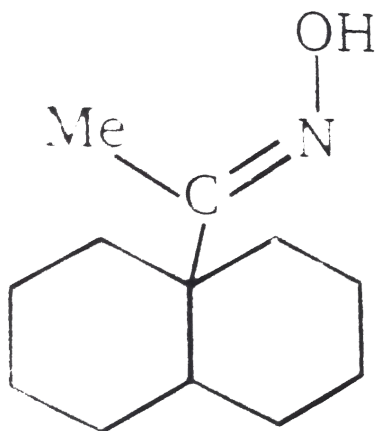
D.

Answer: C



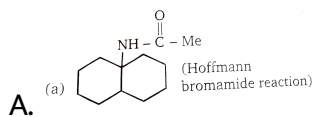
Watch Video Solution

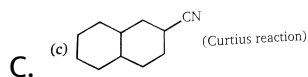
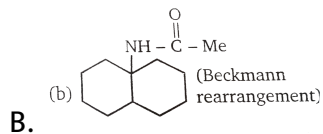
Level 1 Q 1 To Q 30



Product and

name of the reaction is :



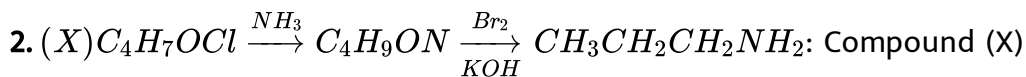


D. None of these

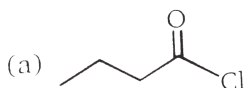
Answer: B



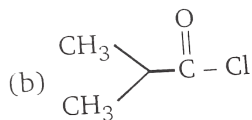
View Text Solution



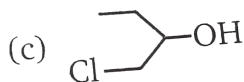
is :



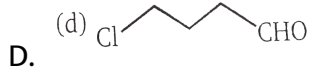
A.



B.



C.

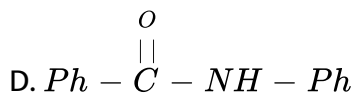
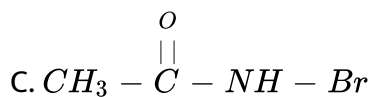
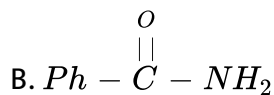
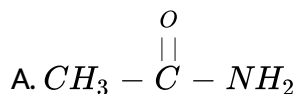


Answer: A



View Text Solution

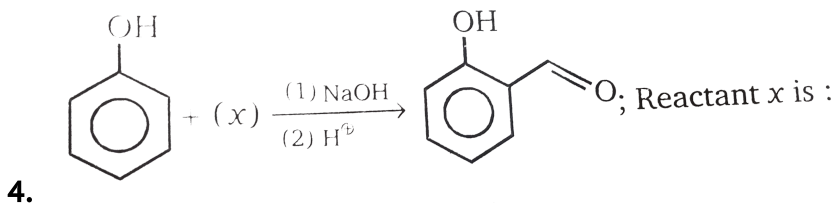
3. Which of the following will not give Hoffmann bromamide reaction ?



Answer: D



View Text Solution



A. CH_3Cl

B. CH_2Cl_2

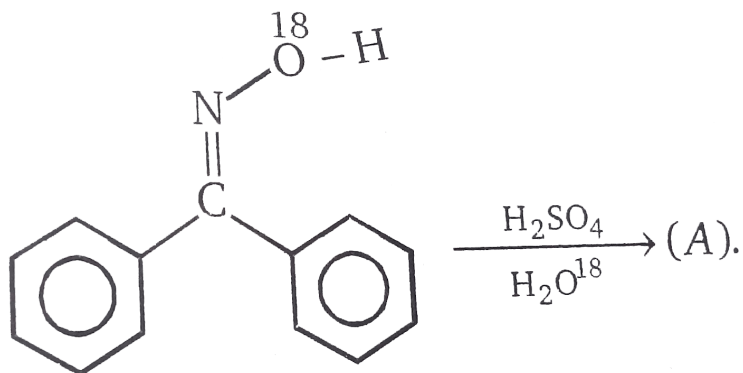
C. CHCl_3

D. CCl_4

Answer: C



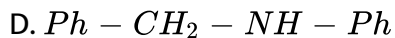
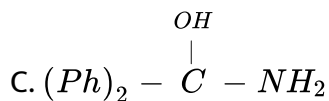
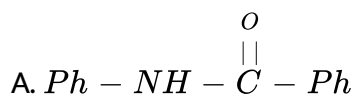
View Text Solution



5.

Product (A)

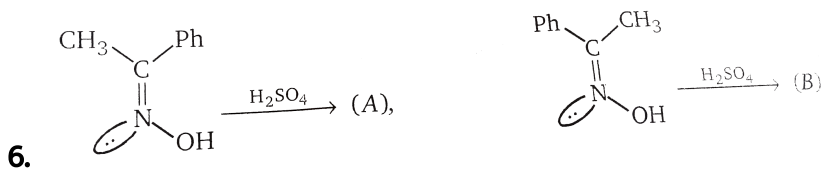
of the reaction :



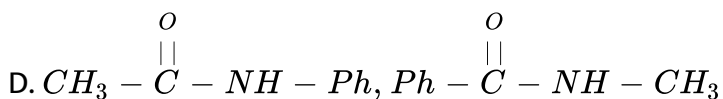
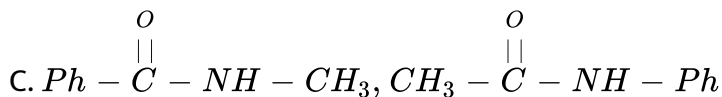
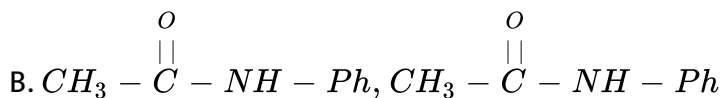
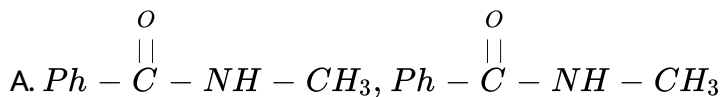
Answer: B



View Text Solution



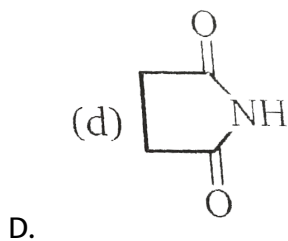
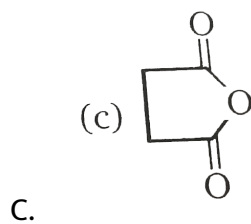
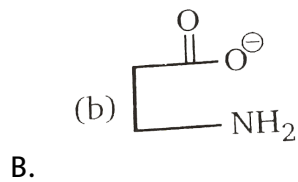
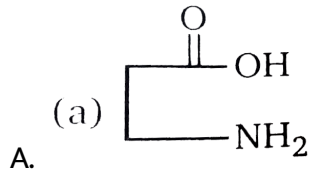
Product (A) & (B) respectively in the above reaction are :



Answer: C

 View Text Solution

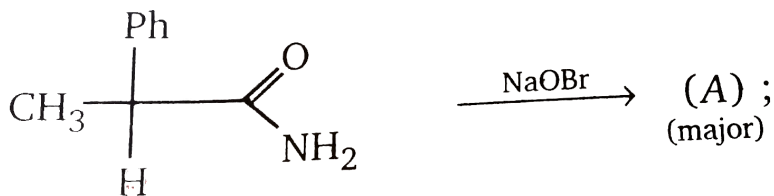
7. $\text{NBS} \xrightarrow{\text{KOBBr}}$ (A). Product (A) is :



Answer: B



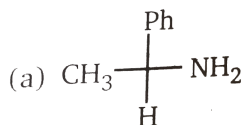
View Text Solution



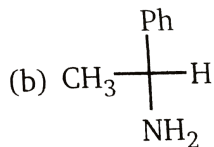
8.

, Product of

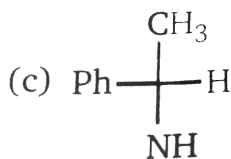
the reaction is :



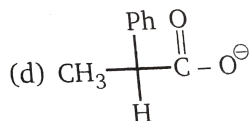
A.



B.



C.

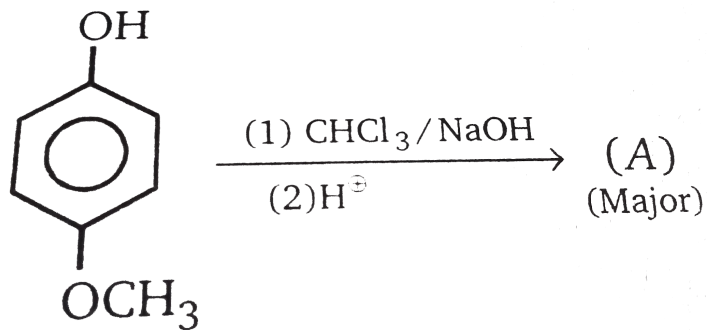


D.

Answer: A



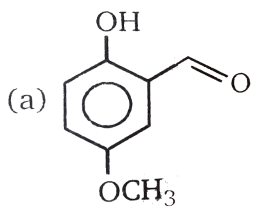
View Text Solution



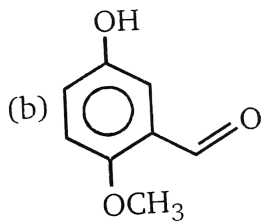
9.

Product (A)

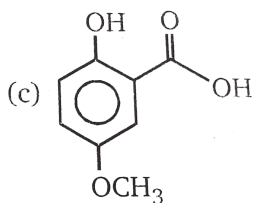
is :



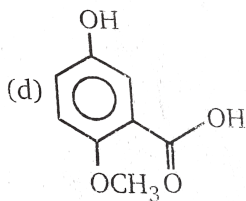
A.



B.



C.



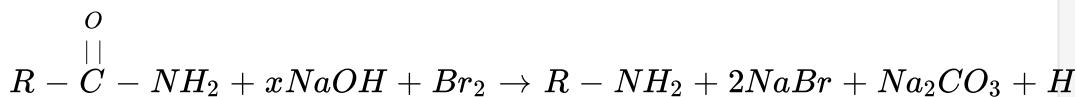
D.

Answer: A



View Text Solution

10.



Number of moles of NaOH used in above Hoffmann bromamide reaction is :

A. 3

B. 4

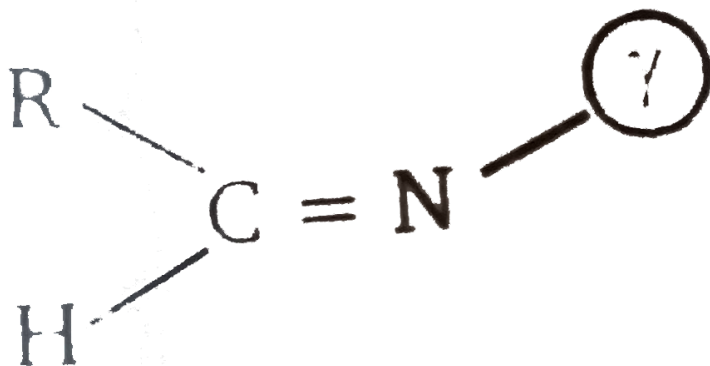
C. 5

D. 6

Answer: B



View Text Solution



11. _____, Rate of reaction toward Beckmann rearrangement

when $y = \underset{(i)}{C}H_3CO_2^-, \underset{(ii)}{C}l-CH_2-CO_2^-, \underset{(iii)}{P}h-SO_3^-$

A. (i) gt (ii) gt (iii)

B. (ii) gt (i) gt (iii)

C. (iii) gt (ii) gt (i)

D. (iii) gt (i) gt (ii)

Answer: C



View Text Solution

12. When primary amine reacts with chloroform in ethanolic KOH, then product is :

A. an isocyanide

B. an aldehyde

C. a cyanide

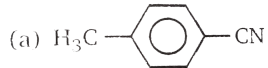
D. an alcohol

Answer: A

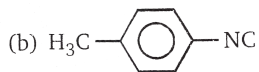


View Text Solution

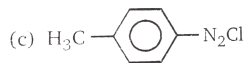
13. The reaction of chloroform with alcoholic KOH and p-toluidine forms :



A.



B.



C.



D.

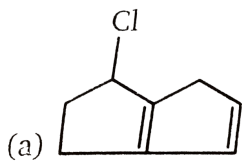
Answer: B



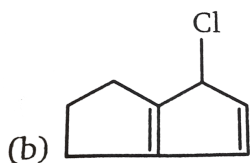
View Text Solution

14. What is the product (Q) of the following reaction ?

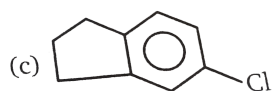




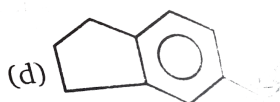
A.



B.



C.

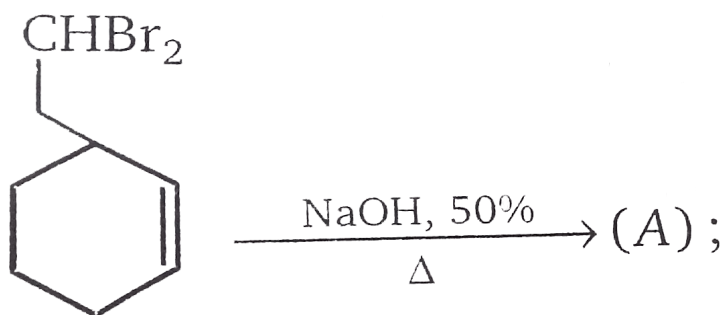


D.

Answer: D



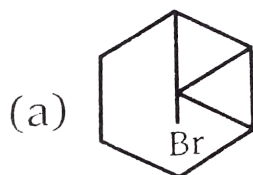
View Text Solution



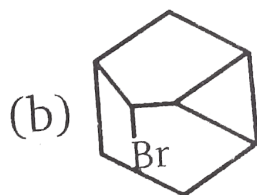
15.

Product

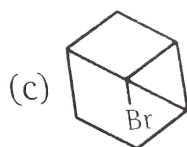
(A) is :



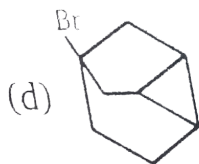
A.



B.



C.



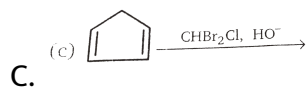
D.

Answer: A

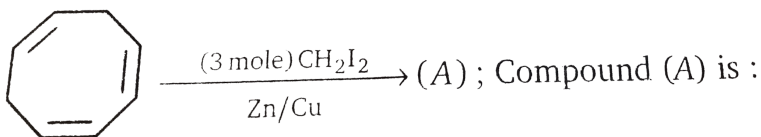


View Text Solution

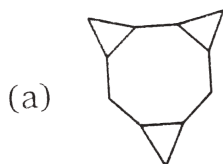
16. Which of the following reaction, does not give chloro benzene as a product ?



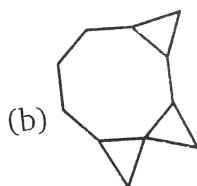
Answer: D



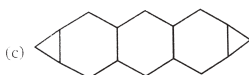
17.



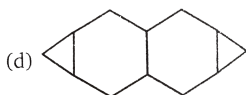
A.



B.

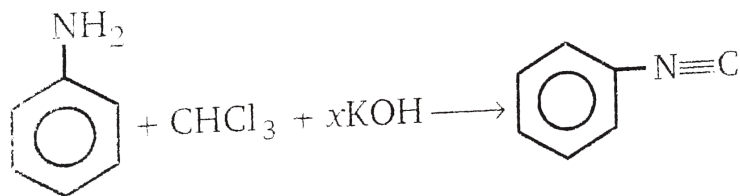


C.



D.

Answer: A



18.

x = moles of KOH consumed is :

A. 1

B. 2

C. 3

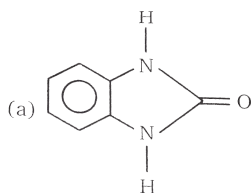
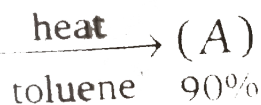
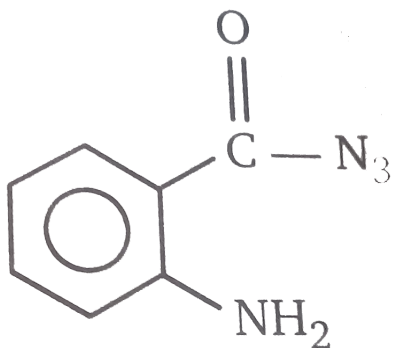
D. 4

Answer: C

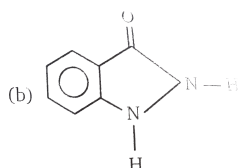


View Text Solution

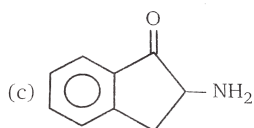
19. Heating the acyl azide in dry toluene under reflux for 3-hours give a 90% yield for a heterocyclic product. Identify the product (A) .



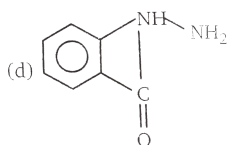
A.



B.



C.

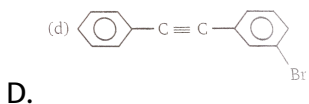
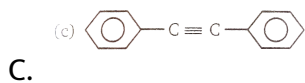
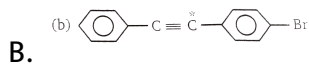
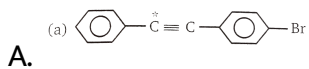
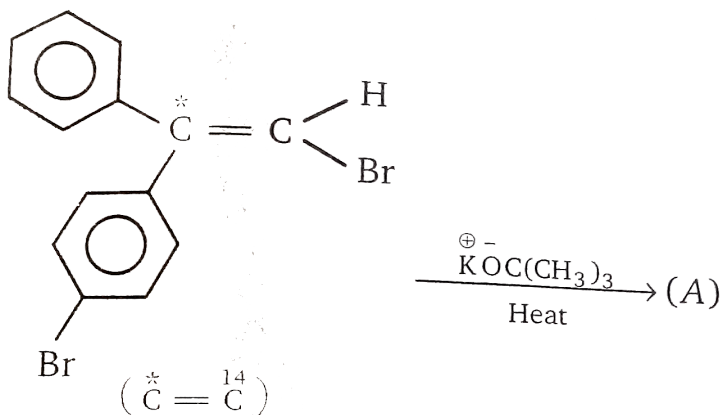


D.

Answer: A

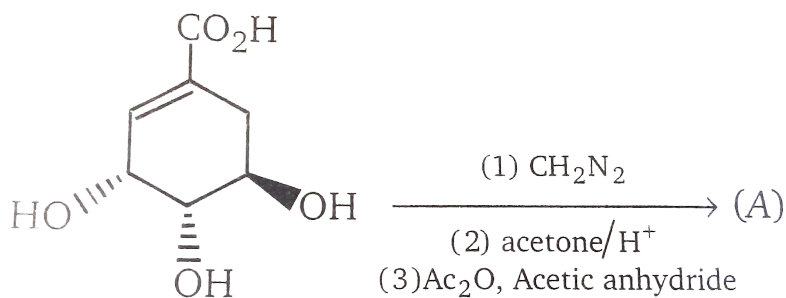


20. Find the final product of the reaction



Answer: B

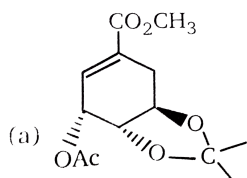




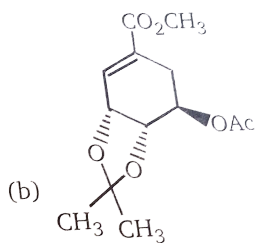
21.

Product

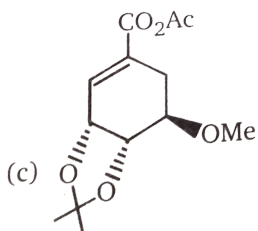
(A) of the above reaction is :



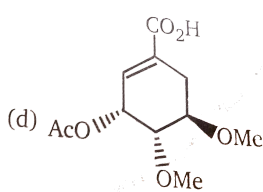
A.



B.



C.



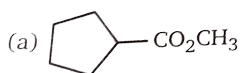
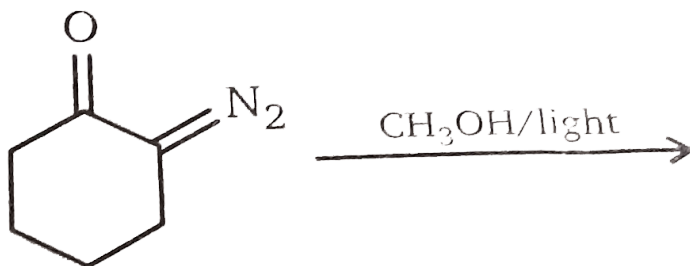
D.

Answer: B

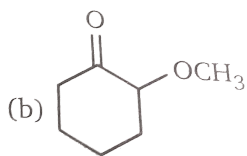


View Text Solution

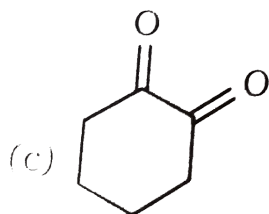
22. A rather interesting example of the Wolff rearrangement with 2-diazocyclohexanone in methanol is given below. Identify the major product :



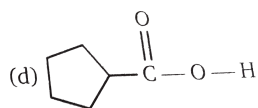
A.



B.



C.



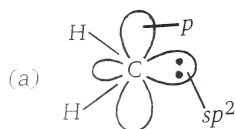
D.

Answer: A



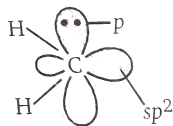
View Text Solution

23. The orbital picture of a singlet carbene ($:CH_2$) can be drawn as :



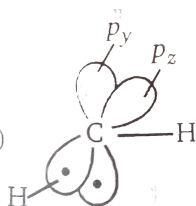
A.

(b)



B.

(c)



C.

D. None of these

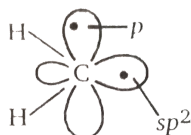
Answer: A



View Text Solution

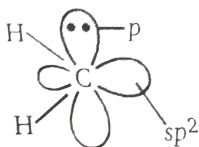
24. The orbital picture of a triplet carbene can be drawn as :

(a)

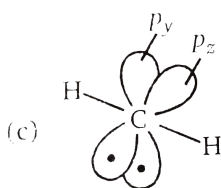


A.

(b)



B.



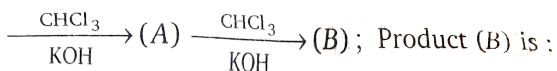
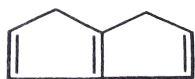
C.

D. None of these

Answer: C



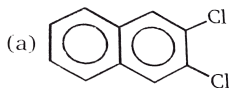
View Text Solution



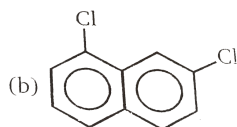
25.

Product

(B) is :

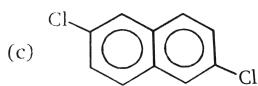


A.

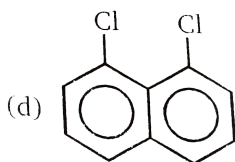


B.

C.



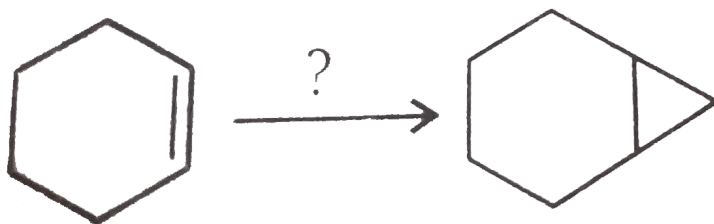
D.



Answer: C



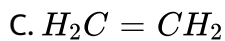
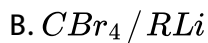
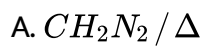
View Text Solution



26.

Select the

reagent for above conversion.



D. t-BuOK

Answer: A



View Text Solution

27.



Product

(A) will be :

A.



B.



C.



D.

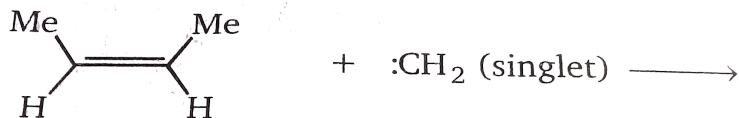


Answer: B

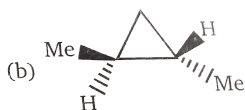


View Text Solution

1. The major product formed in the following reaction is

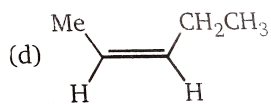


A.



B.

C. 50 : 50 mixture of above two compounds

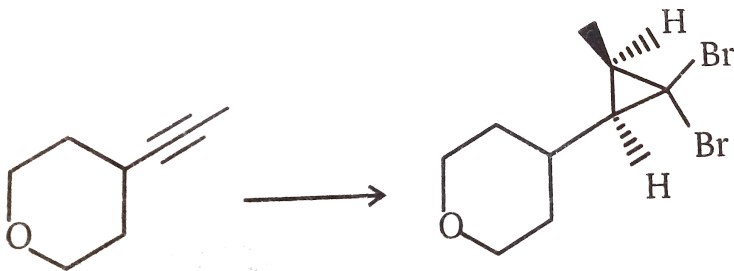


D.

Answer: A



View Text Solution



2.

To carry out above conversion reagent used in decreasing order.

A. $\text{Na} / \text{liq. } \text{NH}_3, \text{CHBr}_3 / \text{NaOH}(\Delta)$

B. $\text{H}_2 / \text{Pd} - \text{CaCO}_3, \text{CHBr}_3 / \text{NaOH}(\Delta)$

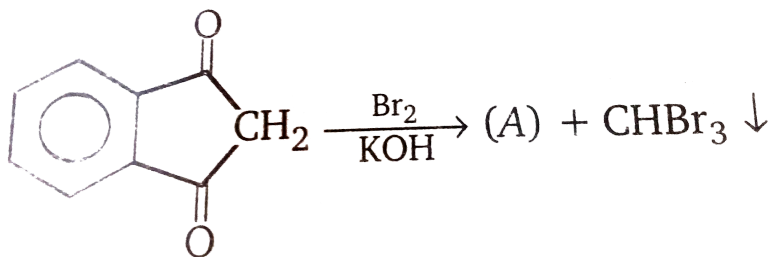
C. $\text{Na} / \text{liq. } \text{NH}_3, \text{CHBr}_3 / \text{NaOH}$

D. $\text{H}_2 / \text{Pd} - \text{CaCO}_3, \text{CHBr}_3 / \text{NaOH}$

Answer: B

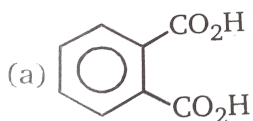


View Text Solution

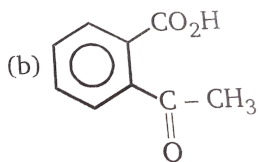


3.

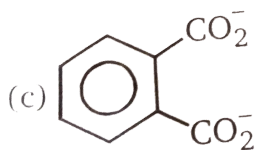
Product (A) of the reaction is :



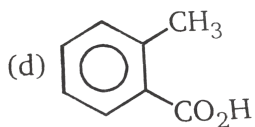
A.



B.



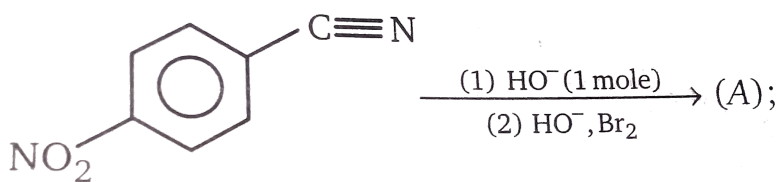
C.



D.

Answer: C

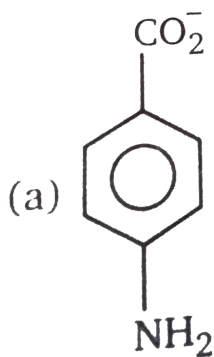




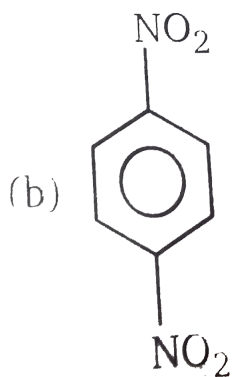
4.

Product (A)

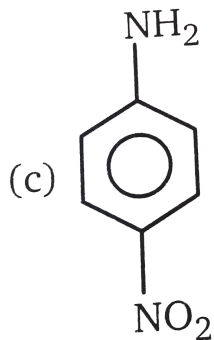
is :



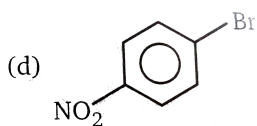
A.



B.



C.

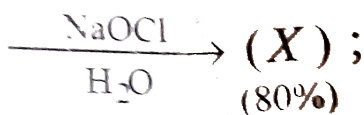
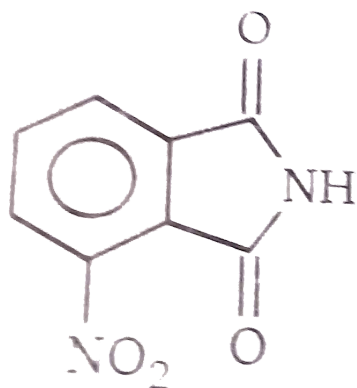


D.

Answer: C

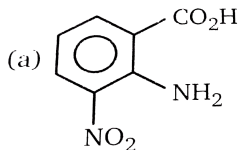


View Text Solution

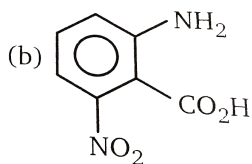


5.

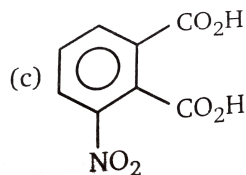
Product X will be :



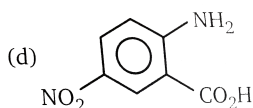
A.



B.



C.

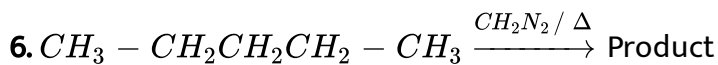


D.

Answer: B



View Text Solution



Which of the following product(s) is/are can be obtained in the above reaction.

A. Isopentane

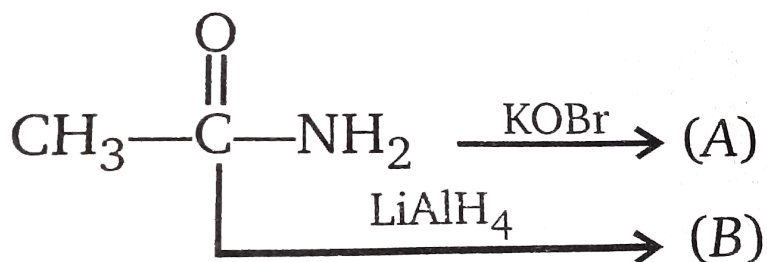
B. 3-Methyl hexane

C. n-pentane

D. 3-Methyl pentane

Answer: D

 **View Text Solution**



7.

(A) Relation

between (A) & (B) is :

A. Identical

B. Functional isomer

C. Homologous

D. Positional isomer

Answer: C



View Text Solution

8. If we use pyrene (CCl_4) in the Riemer-Tiemann reaction in place of chloroform, the product formed is :

A. Salicylaldehyde

B. phenolphthalein

C. Salicylic acid

D. Cyclohexanol

Answer: C



View Text Solution

9. When ethyl amine is heated with chloroform and alcoholic KOH, a compound with offensive smell is obtained. This compound is :

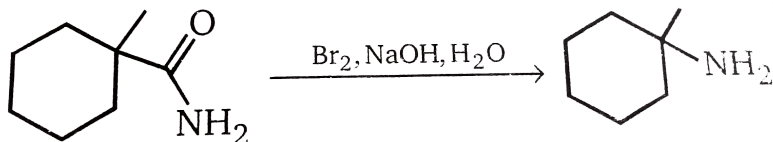
- A. A secondary amine
- B. An isocyanide
- C. a cyanide
- D. An acid

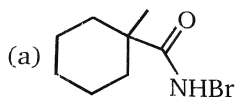
Answer: B



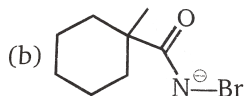
View Text Solution

10. Which of the following species would not be involved in the Hoffmann rearrangement shown below ?

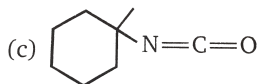




A.



B.



C.

D. All of the above are involved in the reaction.

Answer: D



View Text Solution

11. In which of the following reactions migration of alkyl group from carbon to oxygen is observed ?

A. Pinacol-pinacolone rearrangement

B. Bayer-villiger oxidation.

C. Preparation of phenol from cumene hydroperoxide.

D. Both (b) & (c)

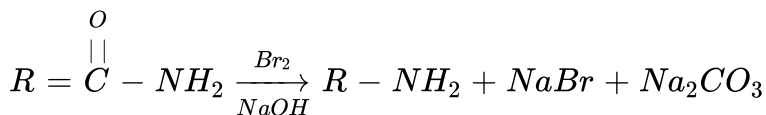
Answer: D



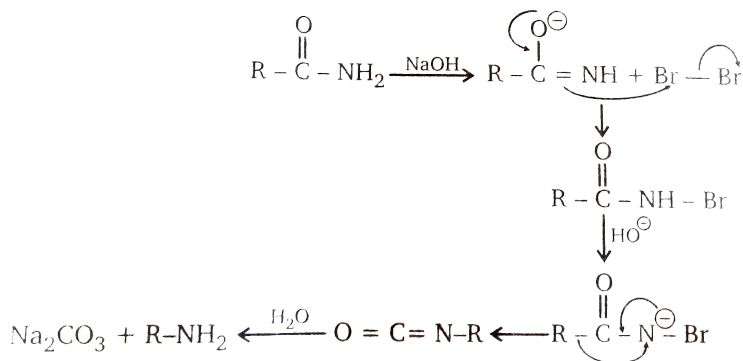
View Text Solution

Level 2

1. Hoffmann bromamide reaction involves conversion of a carboxylic acid amide into an amine with a loss of a carbon atom on treatment with aqueous sodium hypobromite. Thus Hoffmann result in shortening of a carbon chain.



Mechanism of the reaction is :



Number of moles of NaOH consumed in above reaction.

- A. 1
- B. 2
- C. 3
- D. 4

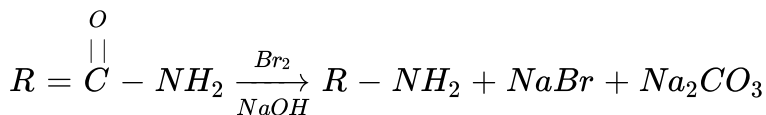
Answer: D



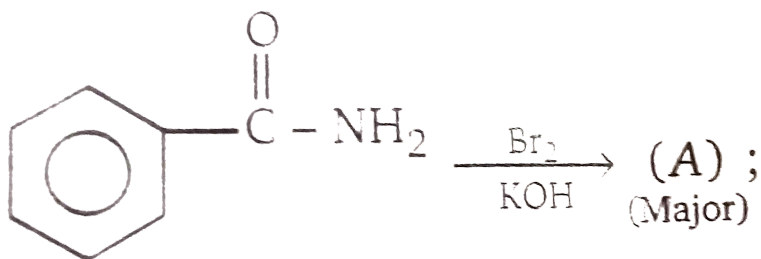
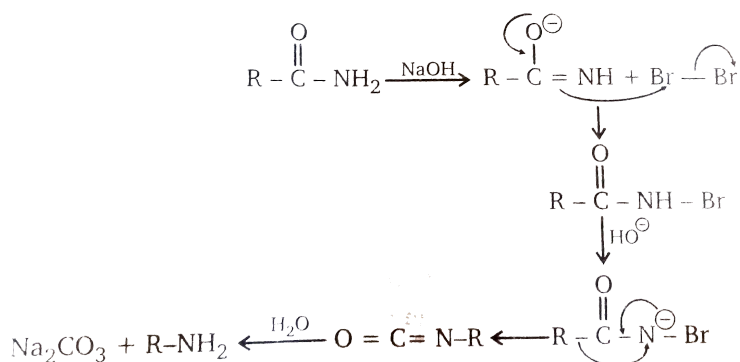
View Text Solution

2. Hoffmann bromamide reaction involves conversion of a carboxylic acid amide into an amine with a loss of a carbon atom on treatment with

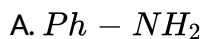
aqueous sodium hypobromite. Thus Hoffmann result in shortening of a carbon chain.

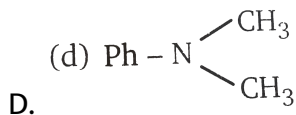


Mechanism of the reaction is :



Product (A) :

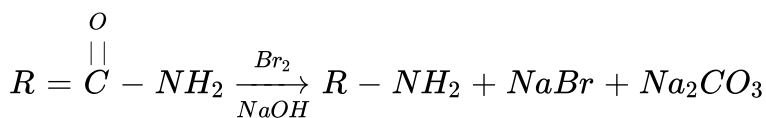




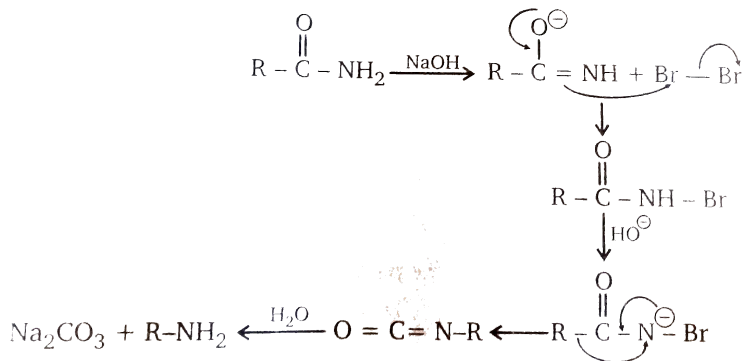
Answer: A

 **View Text Solution**

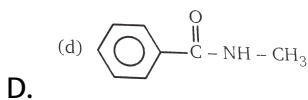
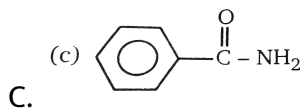
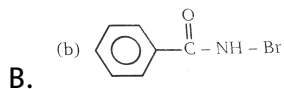
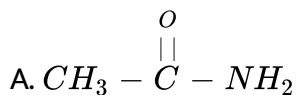
3. Hoffmann bromamide reaction involves conversion of a carboxylic acid amide into an amine with a loss of a carbon atom on treatment with aqueous sodium hypobromite. Thus Hoffmann result in shortening of a carbon chain.



Mechanism of the reaction is :



Which of the following will not give Hoffmann bromamide reaction.

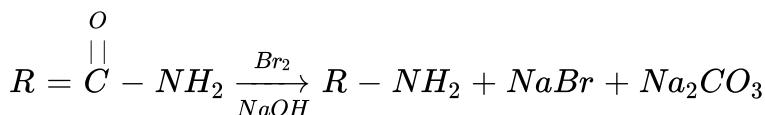


Answer: D

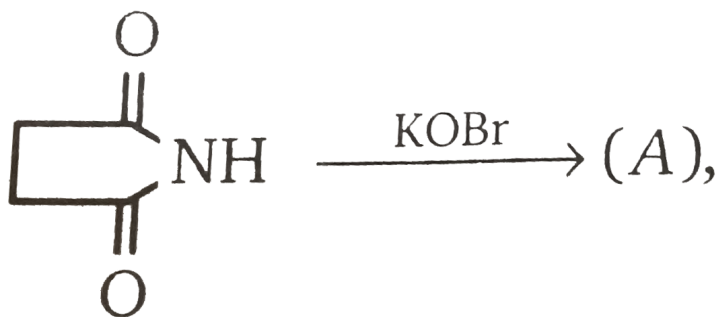
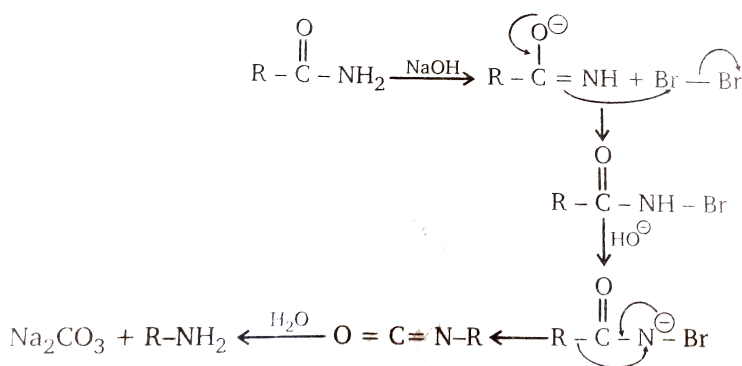


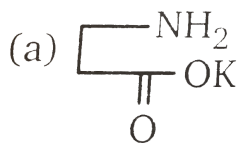
View Text Solution

4. Hoffmann bromamide reaction involves conversion of a carboxylic acid amide into an amine with a loss of a carbon atom on treatment with aqueous sodium hypobromite. Thus Hoffmann result in shortening of a carbon chain.

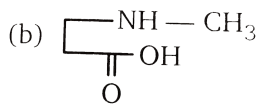


Mechanism of the reaction is :





A.



B.



C.

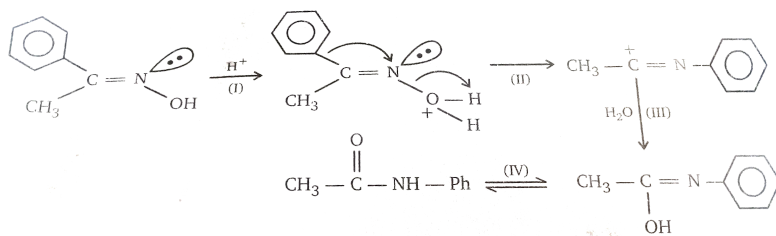
D. None of these

Answer: A



View Text Solution

5. Given is mechanism of Beckmann rearrangement.



Rate determining step in Beckmann rearrangement :

A. I

B. II

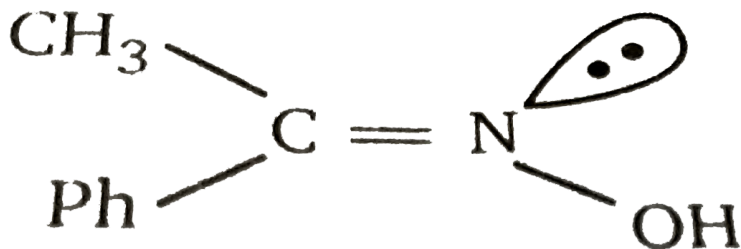
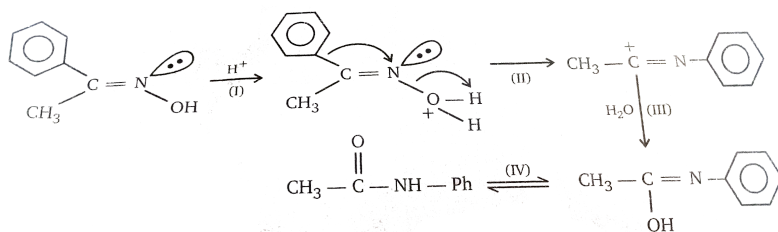
C. III

D. IV

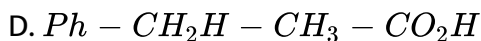
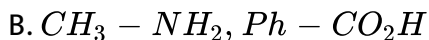
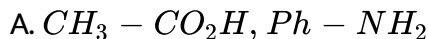
Answer: B

 View Text Solution

6. Given is mechanism of Beakmann rearrangement.



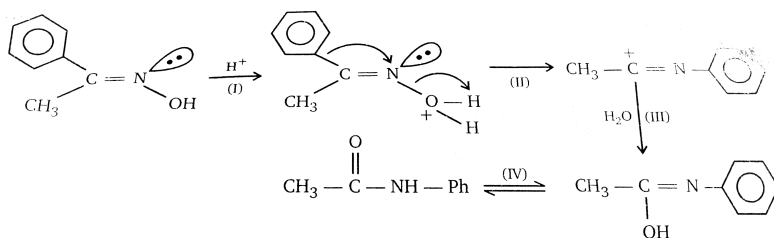
On treatment H_2SO_4 followed by hydrolysis in acidic medium above compound gives.



Answer:

 **View Text Solution**

7. Given is mechanism of Beckmann rearrangement.



Which of the following reagent cannot be used in Beckmann rearrangement?

A. TsOH

B. $R - DO_2Cl$

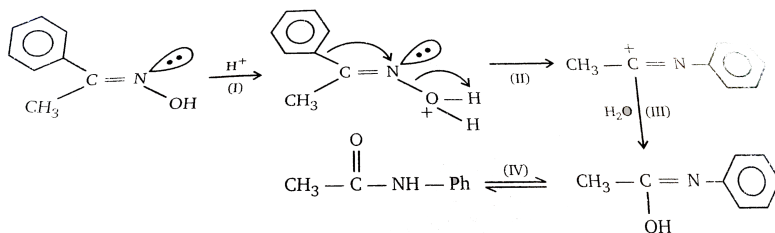
C. BF_3

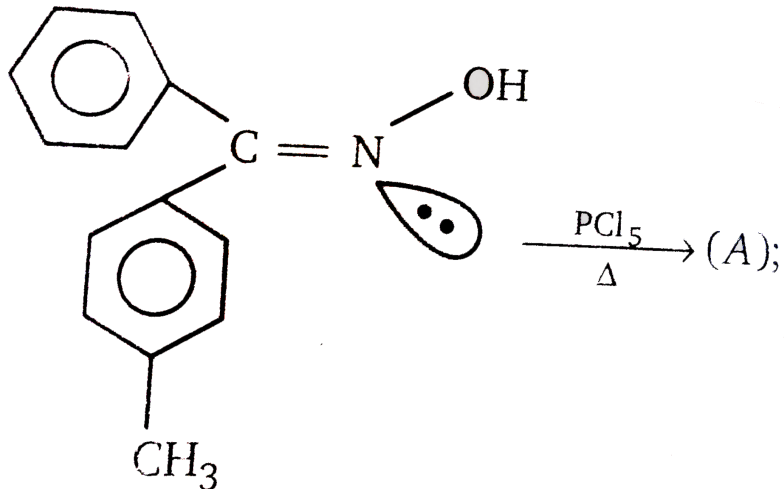
D. Ph - Li

Answer: D

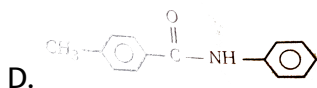
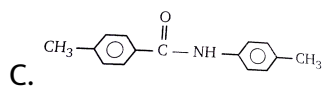
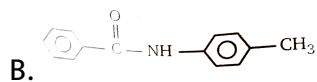
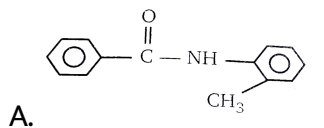
 View Text Solution

8. Given is mechanism of Beakmann rearrangement.





Product (A) of the above reaction is :


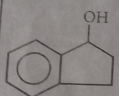
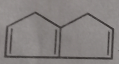
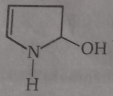


Answer: B



View Text Solution




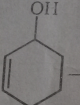
9. Match the column I and II.

Column (I)		Column (II)	
(a)	 $\xrightarrow{\text{aq. KOH}}$ (A) $\xrightarrow[\Delta]{\text{H}^+}$ (B) $\xrightarrow[\text{KOH}]{\text{CHCl}_3}$ (C)	(p)	D.B.E. = even for product (Double bond equivalent)
(b)	 $\xrightarrow[\Delta]{\text{H}^+}$ (A) $\xrightarrow[\text{KOH}]{\text{CHCl}_3}$ (B)	(q)	D.B.E. = odd for product
(c)	 $\xrightarrow[\text{KOH}]{\text{CHCl}_3}$ (A) $\xrightarrow[\text{KOH}]{\text{CHCl}_3}$ (B)	(r)	Ring expansion takes place
(d)	 $\xrightarrow[\Delta]{\text{H}^+}$ (A) $\xrightarrow[\Delta]{\text{CHFCIBr}}$ (B)	(s)	Carbene will formed



View Text Solution


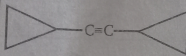
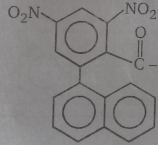
10. Match the column I and II.

Column (I)		Column (II)	
(a)	 $\xrightarrow[\text{KOH}]{\text{CHCl}_3}$	(p)	Reimer-Tiemann reaction
(b)	 $\xrightarrow[\text{KOH}]{\text{CHCl}_3}$	(q)	Reimer-Tiemann expansion (or) Abnormal RNT reaction
(c)	 $\xrightarrow[\Delta]{\text{CCl}_3\text{COONa}}$	(r)	Simman-Smith reaction
(d)	 $\xrightarrow[\Delta]{\text{CH}_2\text{I}_2 + \text{Zn}}$	(s)	Increase in carbon takes place



View Text Solution

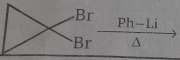
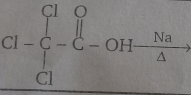
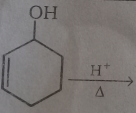
11. Match the column I and II.

Column (I)	Column (II)
<p>(a)  $\xrightarrow[\text{KOBBr}]{\text{SOCl}_2}$ $\xrightarrow[\text{HNO}_2]{\text{NH}_3}$</p>	<p>(p) Aromatic compound will formed</p>
<p>(b)  $\xrightarrow[\text{hv}]{\text{Cyclopropyl azide}}$ (A)</p>	<p>(q) Migration take place from carbon to electron deficient nitrogen</p>
<p>(c) $\phi - \text{CHCl}_2 \xrightarrow{\text{t-BuO}^\ominus \text{K}^\oplus} \text{(A)}$ $\phi - \text{C}\equiv\text{C}-\phi \xrightarrow{\text{AlCl}_3} \text{(C)}$</p>	<p>(r) Carbene will formed in this reaction</p>
<p>(d)  $\xrightarrow{\text{KOBBr}}$</p>	<p>(s) N_2 will evolve.</p>



View Text Solution

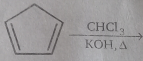



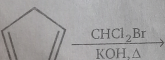

12. Match the column I and II.

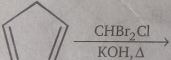

Column (I)		Column (II)	
	Reaction		Intermediate
(a)	$\text{CHCl}_3 + \text{KOH} \xrightarrow{\Delta}$	(p)	Carbocation
(b)	 $\xrightarrow[\Delta]{\text{Ph-Li}}$	(q)	Carbanion
(c)	 $\xrightarrow[\Delta]{\text{Na}}$	(r)	Free radical
(d)	 $\xrightarrow[\Delta]{\text{H}^+}$	(s)	Carbene



View Text Solution

13. Matrix :

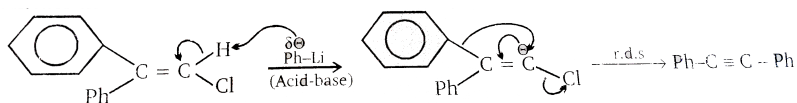
Column (I)		Column (II)	
	Reaction		Product
(a)		(p)	
(b)		(q)	
(c)		(r)	

(d)		(s)	
-----	---	-----	---

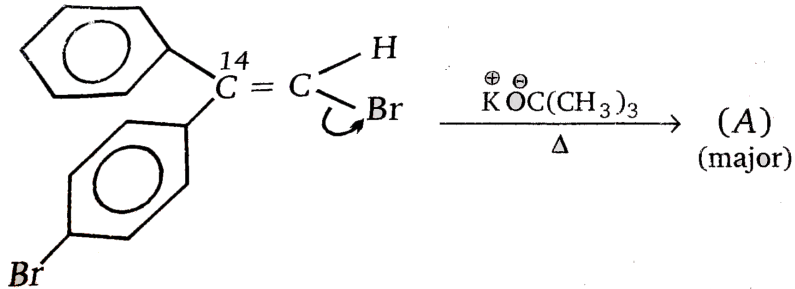


[View Text Solution](#)

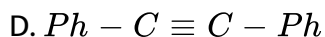
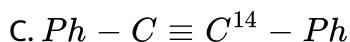
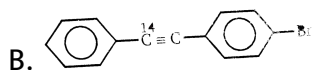
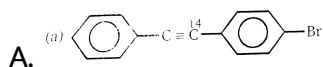
14. Consider the given reaction for preparation of alkyne. (Fritsch reaction).



Anti group will migrate because of less steric hindrance.



product (A) is :

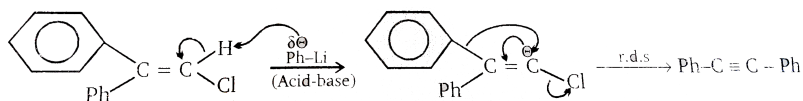


Answer: A

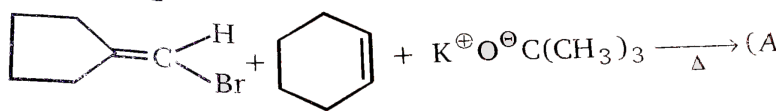


View Text Solution

15. Consider the given reaction for preparation of alkyne. (Fritsch reaction).



Anti group will migrate because of less steric hindrance.

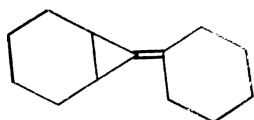


Product (A) is

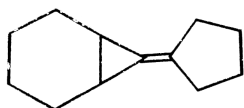
:



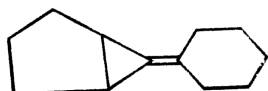
A.



B.



C.



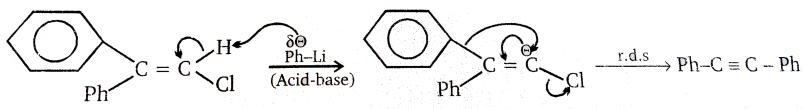
D.

Answer: C



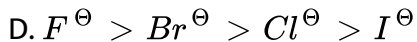
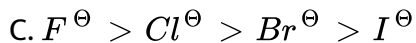
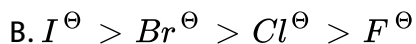
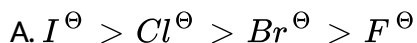
View Text Solution

16. Consider the given reaction for preparation of alkyne. (Fritsch reaction).



Anti group will migrate because of less steric hindrance.

Rate of reaction when the halide ion :

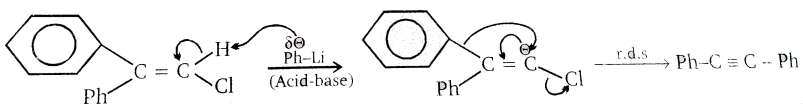


Answer: B

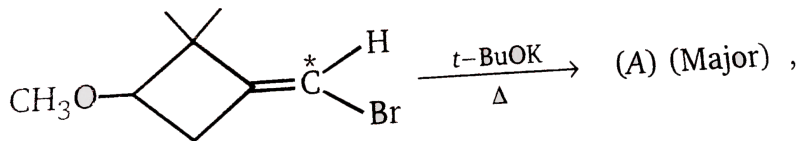


View Text Solution

17. Consider the given reaction for preparation of alkyne. (Fritsch reaction).

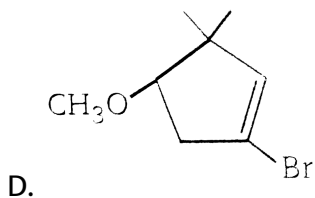
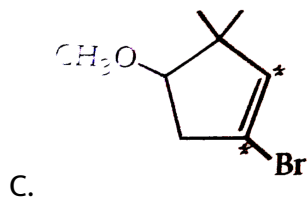
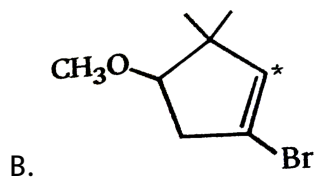
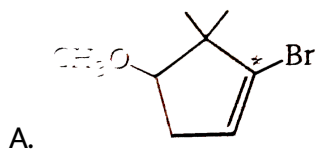


Anti group will migrate because of less steric hindrance.



Product (A) is

$: (C^{\cdot} = C^{14})$



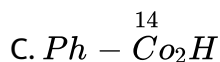
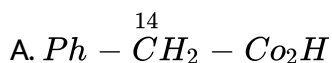
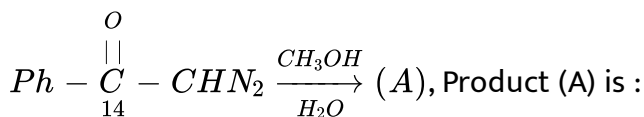
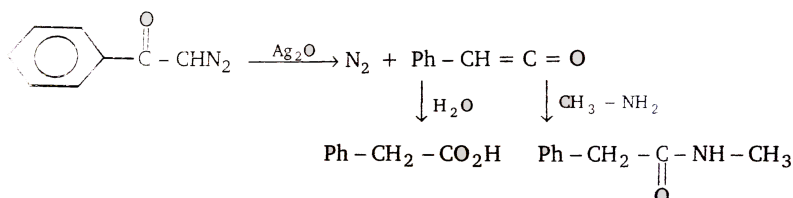
Answer: D



View Text Solution

18. Wolff rearrangement /,brgt When α -Diazoketones are photo - irradiated or heated at high temperature or reacted with silver oxide or silver salts at room temperature, they lose nitrogen and rearrange to form ketene.

The ketenes react rapidly with water, alcohol and amines. Therefore, the reactions called Wolff-rearrangement.



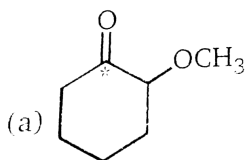
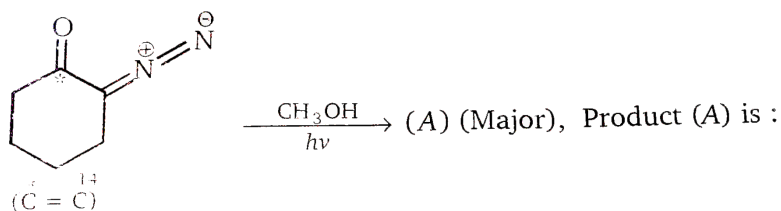
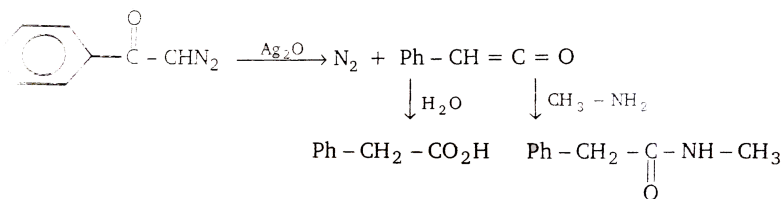
Answer: B



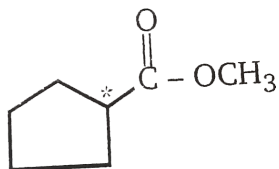
View Text Solution

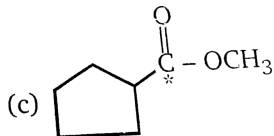
19. Wolff rearrangement /,brgt When α -Diazoketones are photo-irradiated or heated at high temperature or reacted with silver oxide or silver salts at room temperature, they lose nitrogen and rearrange to form ketene.

The ketenes react rapidly with water, alcohol and amines. Therefore, the reactions are called Wolff-rearrangement.

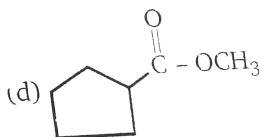


A.





C.



D.

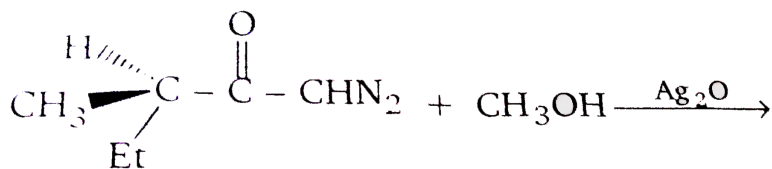
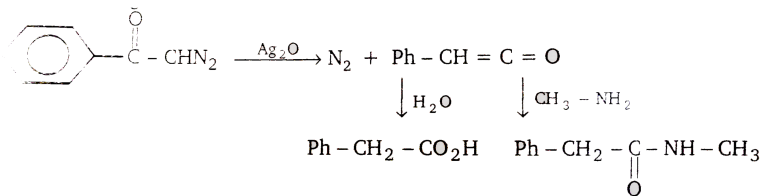
Answer: C



View Text Solution

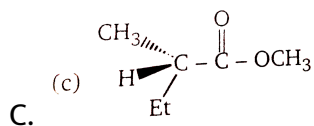
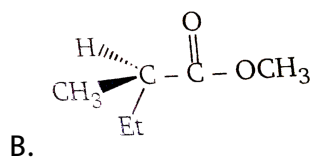
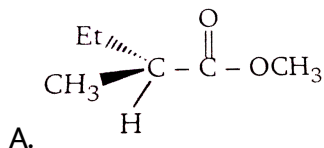
20. Wolff rearrangement /,brgt When α -Diazoketones are photo-irradiated or heated at high temperature or reacted with silver oxide or silver salts at room temperature, they lose nitrogen and rearrange to form ketene.

The ketenes react rapidly with water, alcohol and amines. Therefore, the reactions are called Wolff-rearrangement.



Major

product of the reaction is :



D. None of these

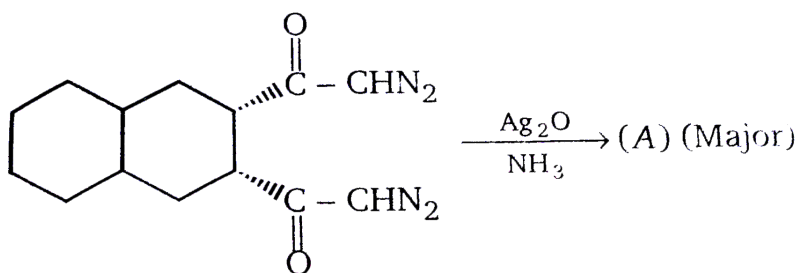
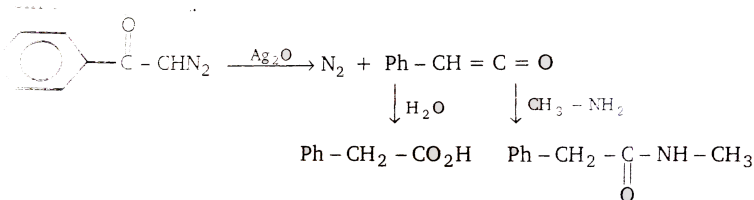
Answer: D



View Text Solution

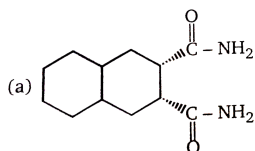
21. Wolff rearrangement /,brgt When α -Diazoketones are photo - irradiated or heated at high temperature or reacted with silver oxide or silver salts at room temperature, they lose nitrogen and rearrange to form ketene.

The ketenes react rapidly with water, alcohol and amines. Therefore, the reactions are called Wolff-rearrangement.

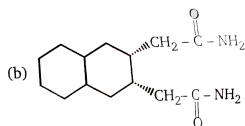


Product (A) is

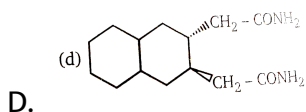
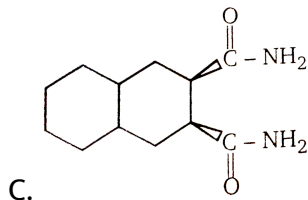
:



A.



B.

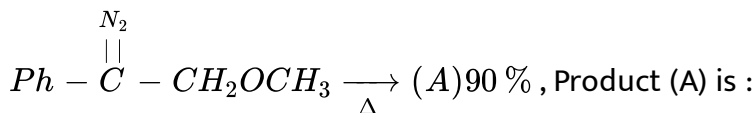
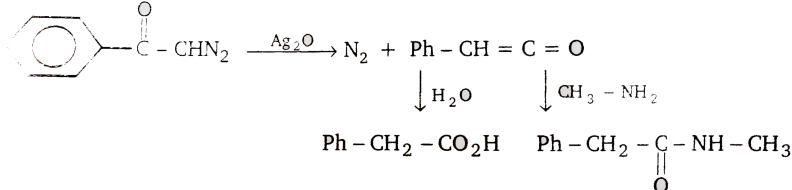


Answer: B

 **View Text Solution**

22. Wolff rearrangement /,brgt When α -Diazoketones are photo - irradiated or heated at high temperature or reacted with silver oxide or silver salts at room temperature, they lose nitrogen and rearrange to form ketene.

The ketenes react rapidly with water, alcohol and amines. Therefore, the reactions called Wolff-rearrangement.



- A. $\text{Ph} - \text{CH} = \text{CH} - \text{OH}$
- B. $\text{Ph} - \text{CH} = \text{CH} - \text{OCH}_3$
- C. $\text{CH}_3 - \text{CH} = \text{CH} - \text{O} - \text{Ph}$
- D. $\text{CH}_3 - \text{CH} = \text{CH} - \text{OH}$

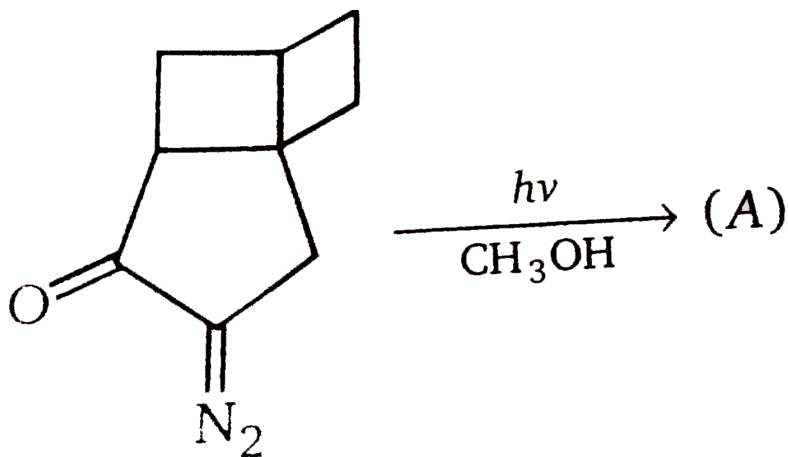
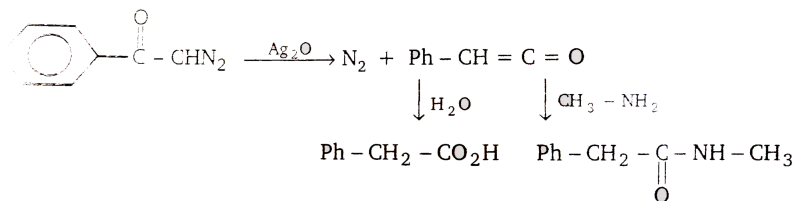
Answer: B



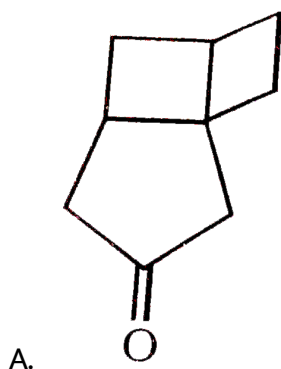
View Text Solution

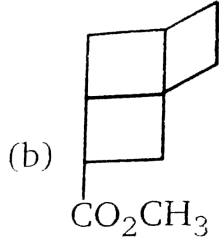
23. Wolff rearrangement When α -Diazoketones are photo-irradiated or heated at high temperature or reacted with silver oxide or silver salts at room temperature, they lose nitrogen and rearrange to form ketene.

The ketenes reacts rapidly with water, alcohol and amines. Therefore, the reactions called Wolff-rearrangement.

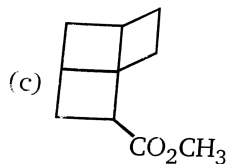


Product (A) is :

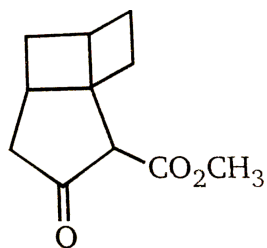




B.



C.



D.

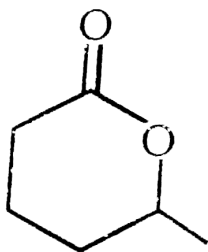
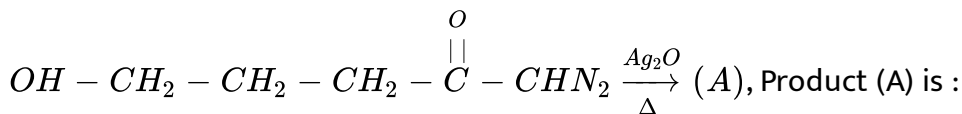
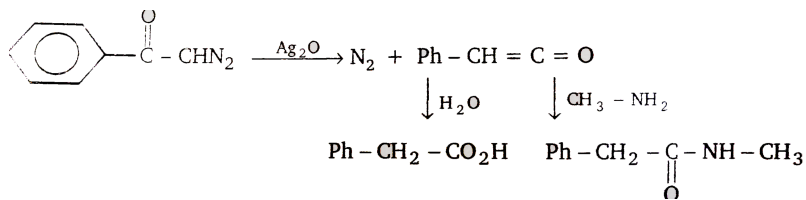
Answer: B



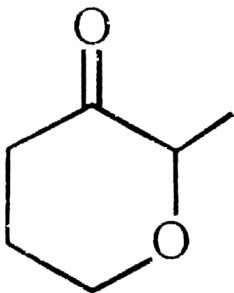
View Text Solution

24. Wolff rearrangement /,brgt When α -Diazoketones are photo - irradiated or heated at high temperature or reacted with silver oxide or silver salts at room temperature, they lose nitrogen and rearrange to form ketene.

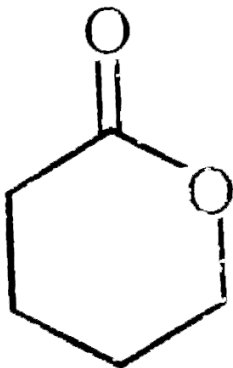
The ketenes reacts rapidly with water, alcohol and amines. Therefore, the reactions called Wolff-rearrangement.



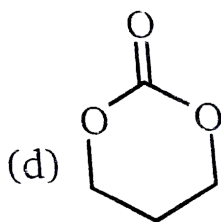
A.



B.



C.



(d)

D.

Answer: C



View Text Solution