



CHEMISTRY

BOOKS - MTG WBJEE CHEMISTRY (HINGLISH)

AROMATIC COMPOUNDS

Wb Workout Category 1 Single Option Correct Type

1. Ethylene is an unsaturated hydrocarbon which decolourises Br_2/CCl_4 and alkaline $KMnO_4$ solutions. In contrast, benzene is highly unsaturated

yet it does not give the above reactions. This is because

A. Br_2/CCl_4 and alkaline $KMnO_4$ are mild reagents

B. all the carbon-carbon bond lengths in benzene are equal

C. benzene is stabilized by resonance

D. benzene is a planar molecule.

Answer: C



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2. Benzene reacts with Cl_2 in presence of a halogen carrier to produce

- A. benzyl chloride
- B. benzal chloride
- C. chlorobenzene
- D. benzene hexachloride

Answer: C



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3. The direct iodination of benzene is not possible because

- A. iodine is an oxidising agent
- B. resulting C_6H_5I is reduced to C_6H_6 by HI
- C. HI is unstable
- D. the ring gets deactivated.

Answer: B



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4. An activating group

- A. activates only o- and p- positions
- B. deactivates m-position
- C. activates o- and p- more than m-position
- D. deactivates m- more than o- and p- positions.

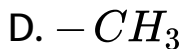
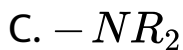
Answer: C



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5. Amongst the following, moderately activating group is

A. — *NHR*



Answer: B



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6. The correct sequence for activation power of a group in benzene is

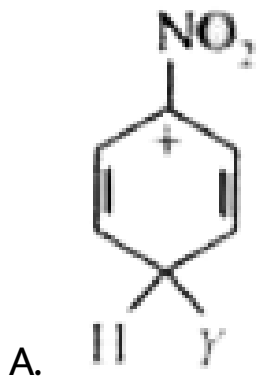


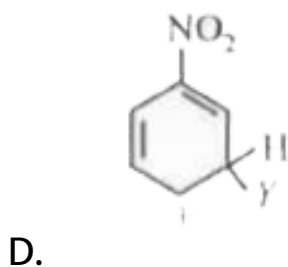
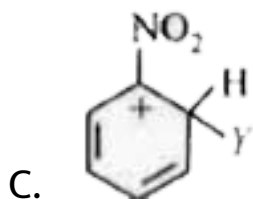
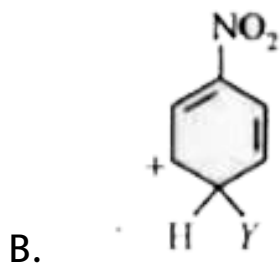


Answer: A

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7. Which of the following carbocations is expected to be most stable?





Answer: D



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8. In aniline, the $-NH_2$ group

- A. activates the benzene ring via both inductive and resonance effects
- B. deactivates the benzene ring via both inductive and resonance effects
- C. activates the benzene ring via resonance effect and deactivates it via inductive-effect
- D. activates the benzene ring via inductive effect and deactivates it via resonance effect.

Answer: C



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9. Benzenesulphonic acid is formed when benzene is treated with

- A. cold dilute H_2SO_4
- B. dilute but hot H_2SO_4
- C. hot and concentrated H_2SO_4
- D. all of these

Answer: C



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10. Which of the following when treated with superheated steam under pressure gives benzene?

A. benzenesulphonic acid

B. benzyl chloride

C. bromobenzene

D. nitrobenzene.

Answer: A



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11. Benzene can be converted into toluene by

- A. Kolbe's reaction
- B. Sabatier and Sendrens reaction
- C. Reimer-Tiemann reaction
- D. Friedel-Craft's reaction

Answer: D



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12. A catalyst that can be employed for Friedel-Crafts acylation is

- A. anhydrous $CuCl_2$

B. anhydrous $B\text{Cl}_3$

C. anhydrous CaCl_2

D. hydrated AlCl_3

Answer: B



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13. Benzene reacts with n-propyl bromide in presence of anhydrous AlCl_3 to predominantly yield

A. n-propylbenzene

B. ethylbenzene

C. isopropylbenzene

D. methylbenzene.

Answer: C



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14. Friedel-Crafts reaction of benzene with isobutyl chloride produces

A. isobutylbenzene

B. tert-butylbenzene

C. n-butylbenzene

D. sec-butylbenzene.

Answer: B



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15. Oxidation of benzene with air at 725 K in presence of V_2O_5 as catalyst gives

A. maleic acid

B. malic acid

C. malonic acid

D. maleic anhydride.

Answer: D



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16. Which of the following on oxidation with hot alkaline $KMnO_4$ gives benzoic acid?

- A. Toluene
- B. Ethylbenzene
- C. Zw-propylbenzene
- D. All of these

Answer: D





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17. Which of the following on oxidation with alkaline $KMnO_4$ followed by acidification with dilute HCl does not give benzoic acid?

- A. Toluene
- B. Ethylbenzene
- C. Iso-propylbenzene
- D. tert-butylbenzene

Answer: D



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18. Benzylamine can be obtained from benzonitrile by

- A. hydrolysis
- B. reduction
- C. oxidation
- D. reaction with ammonia.

Answer: B



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19. The reaction, $C_6H_5CONH_2 \xrightarrow[\Delta]{Br_2 + KOH} C_6H_5NH_2$

is called

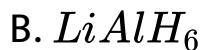
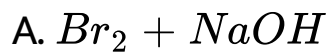
- A. Gabriel phthalimide reaction
- B. Hofmann bromamide reaction
- C. Hofmann ammonolysis of alkyl halides
- D. Hofmann mustard oil reaction.

Answer: B



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20. Which of the following reagents can be used to convert primary amides into primary amines containing the same number of carbon atoms?



C. both of these

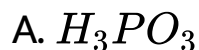
D. none of these

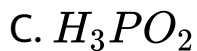
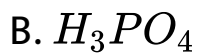
Answer: B



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21. Benzene diazonium chloride can be converted into benzene on treatment with





Answer: C



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22. Benzene diazonium chloride on treatment with KCN in presence of Cu powder gives

A. benzene

B. aniline

C. benzonitrile

D. benzanilide.

Answer: C



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23. Picric acid is

A. trinitrotoluene

B. trinitroaniline

C. a volatile liquid

D. 2,4,6-trinitrophenol.

Answer: D



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24. Which of the following is most acidic?

A. Phenol

B. CH_3CH_2OH

C. Picric acid

D. p-Nitrophenol

Answer: C



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25. Increasing order of acid strength among p-methoxyphenol, p-methylphenol and p-nitrophenol is

A. p-nitrophenol, p-methoxyphenol, p-methylphenol

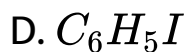
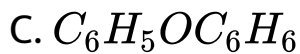
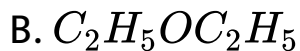
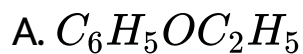
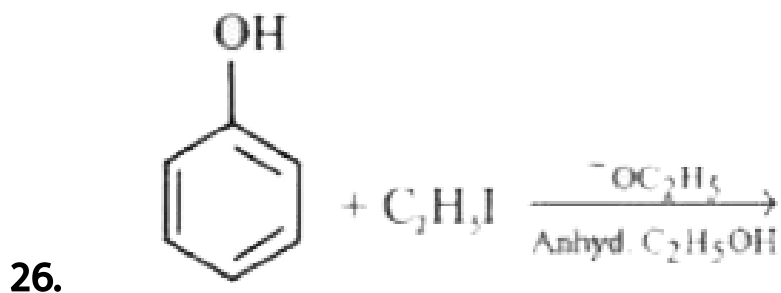
B. p-methylphenol, p-methoxyphenol, p-nitrophenol

C. p-nitrophenol, p-methylphenol, p-methoxyphenol

D. p-methoxyphenol, p-methylphenol, p-nitrophenol.

Answer: D

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Answer: B



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27. The reaction, $C_6H_5OH \xrightarrow[\text{Pyridine}]{CH_3COCl} C_6H_5CCH_3$ is called

- A. Reimer - Tiemann reaction
- B. Schotten - Baumann reaction
- C. acetylation
- D. benzylation.

Answer: C





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28. The effective electrophile in aromatic sulphonation is



Answer: D



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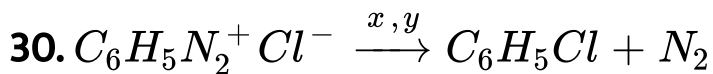
29. When phenol is treated with $CHCl_3$ and $NaOH$, the major product formed is

- A. o-hydroxybenzaldehyde
- B. p-hydroxybenzaldehyde
- C. o-hydroxybenzoic acid
- D. p-hydroxybenzoic acid

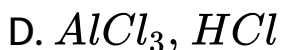
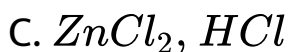
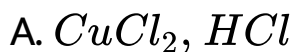
Answer: A



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X and y in the above reaction are

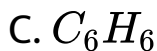
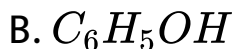
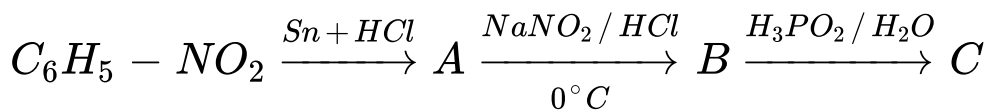


Answer: B



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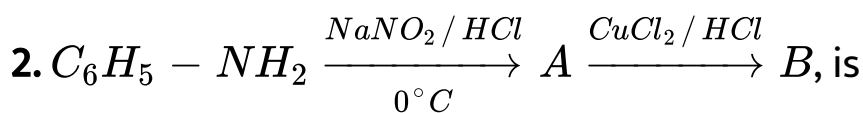
1. Identify C in the following sequence of reactions:

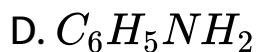
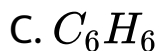
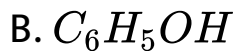
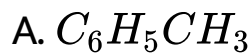


Answer: C



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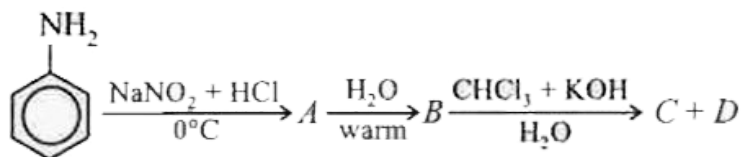


Answer: B



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3. Identify C and D in the following reactions :



A. o,p- hydroxybenzylamine

B. p-aminophenol

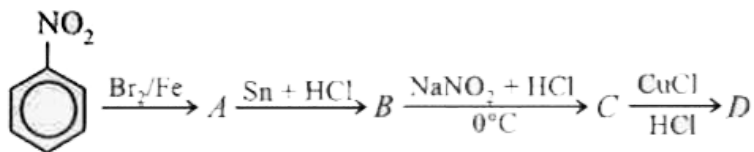
C. o, p-hydroxybenzaldehyde

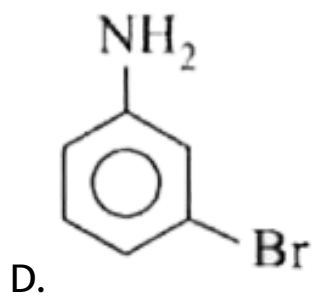
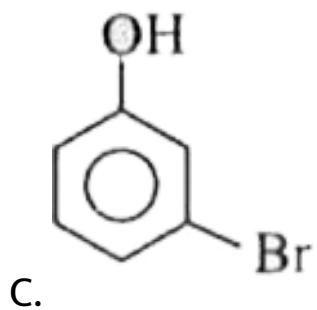
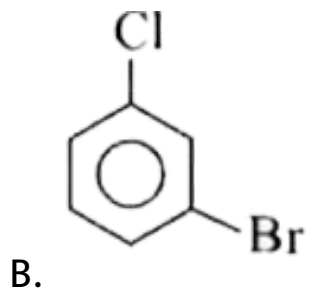
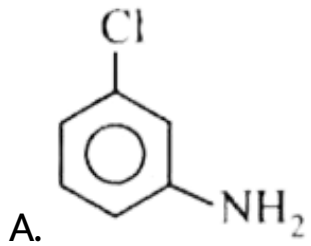
D. O, p-hydroxybenzoic acid

Answer: C

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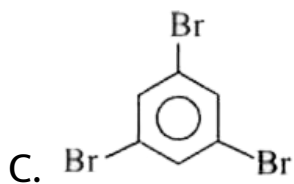
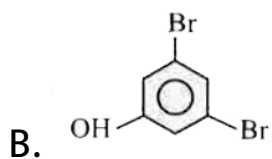
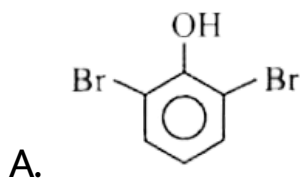
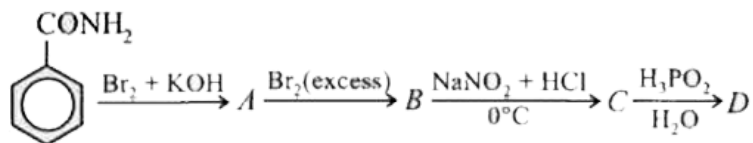
4. Identify D .





Answer: B

5. What is D in the following sequence of reactions ?





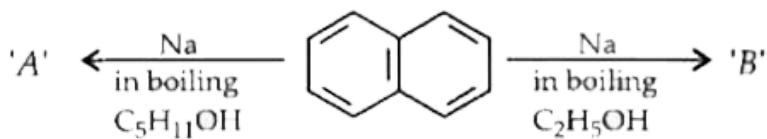
D.

Answer: C

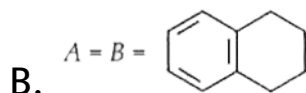
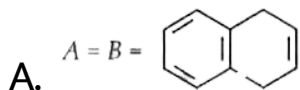


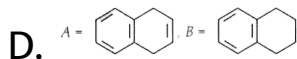
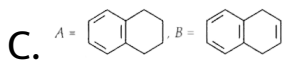
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6.



'A' and 'B' are

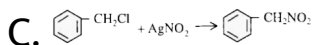
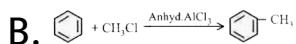
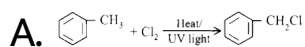




Answer: C

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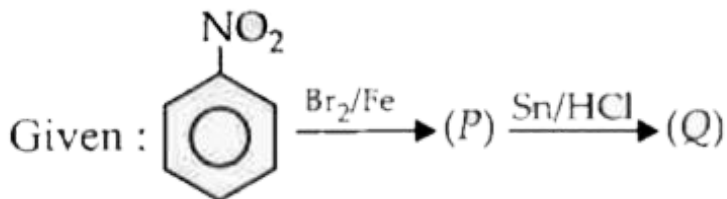
7. Which one of the following is a free-radical substitution reaction?





Answer: A

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8. Given :

The products P and Q are

- | | | |
|----|--------------------------|---------------------|
| A. | P
p-bromonitrobenzene | Q
p-bromoaniline |
| B. | P
o-bromonitrobenzene | Q
o-bromoaniline |

C.

P

o,p-dibromonitrobenzene

Q

o,p-dibromoaniline

P

D.

m-bromonitrobenzene

Q

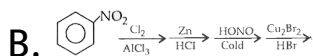
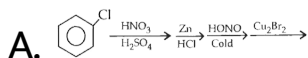
m-bromoaniline

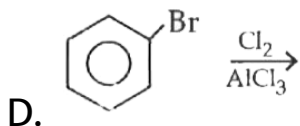
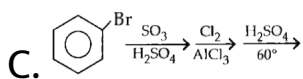
Answer: D



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9. Which of the following is the best method for synthesis of 1-bromo-3-chlorobenzene?

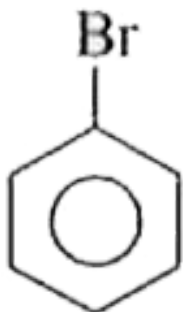
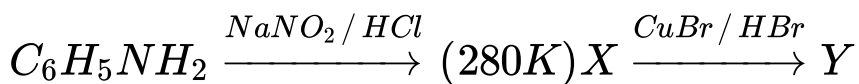


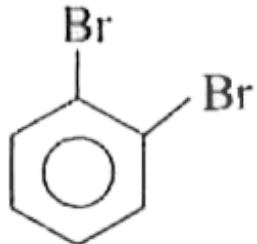


Answer: B

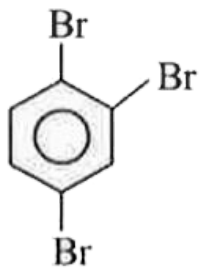
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10. Identify y in the following reaction,

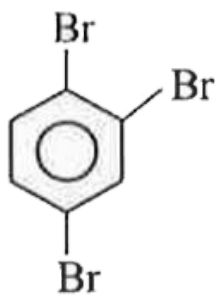




B.



C.



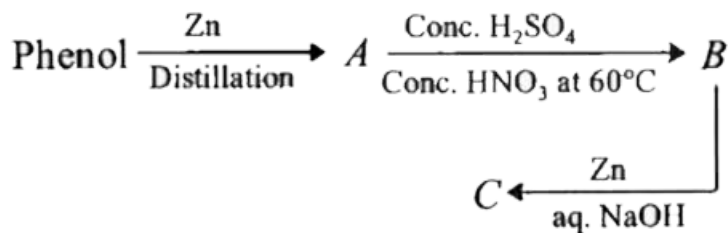
D.

Answer: A



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11. In the reaction ,



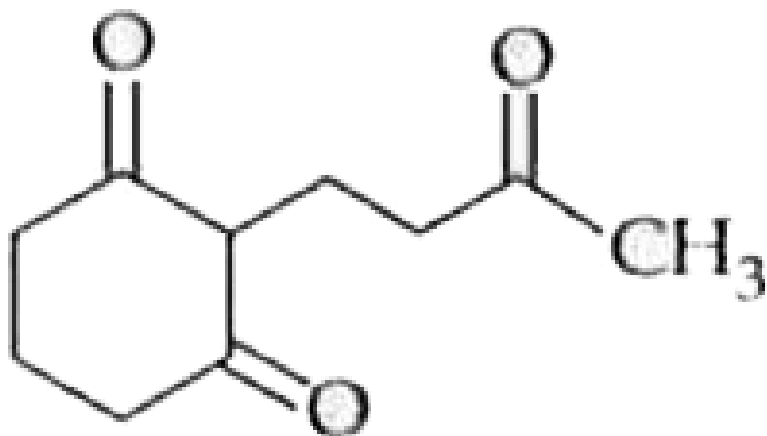
The compounds A,B and C are respectively

- A. benzene, nitrobenzene and aniline
- B. benzene, dinitrobenzene and m-toluidine
- C. toluene, nitrobenzene and m-toluidine
- D. benzene, nitrobenzene and hydrazobenzene.

Answer: D

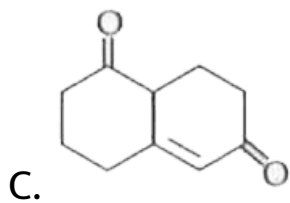
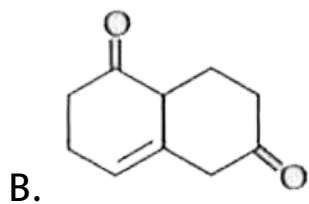
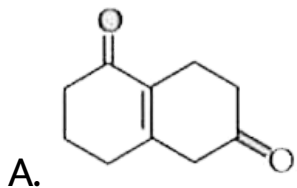


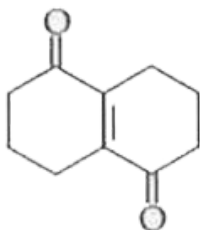
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12.

on aldol condensation followed by heating gives

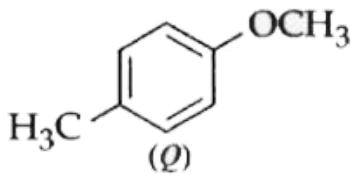
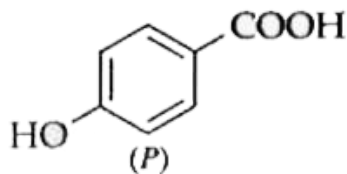




D.

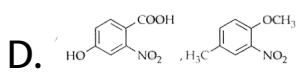
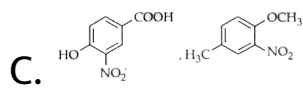
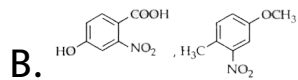
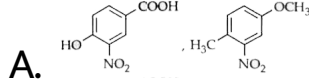
Answer: C

 [View Text Solution](#)



13.

The compounds P and Q were separately subjected to nitration using HNO_3/H_2SO_4 mixture. The major product formed in each case respectively is



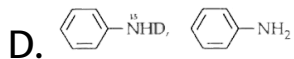
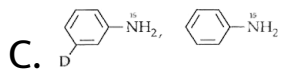
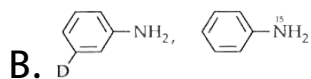
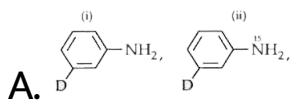
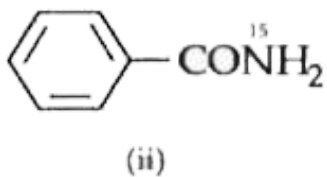
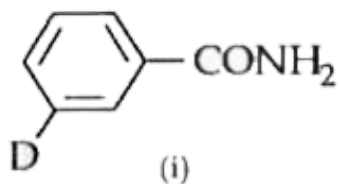
Answer: C



View Text Solution

14. What are constituent amines formed when the mixture of (i) and (ii) undergo Hofmann bromamide

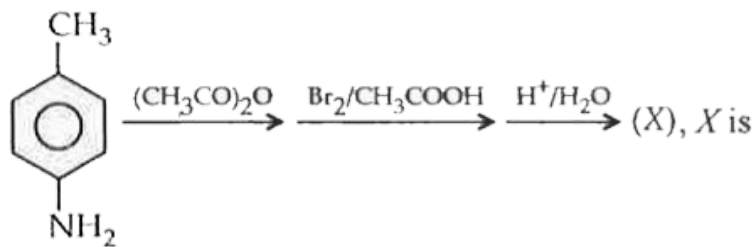
degradation?



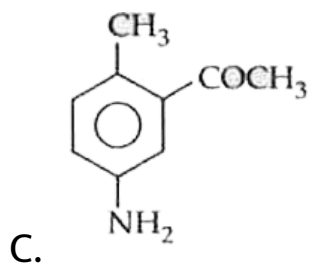
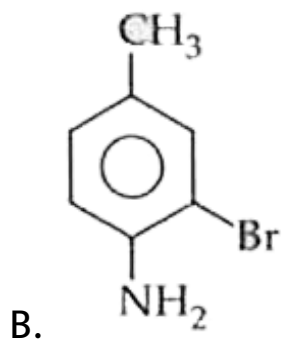
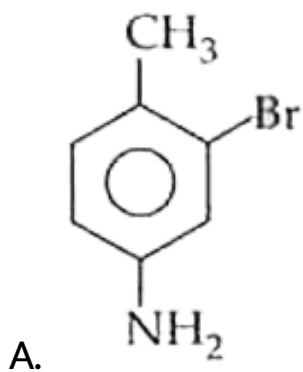
Answer: B

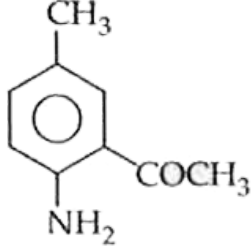


View Text Solution



X is





D.

Answer: B



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Wb Workout Category 3 One Or More Option Correct Type

1. Select the incorrect statement(s) about benzene amongst the following

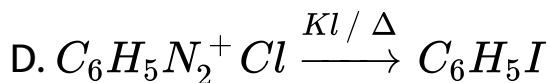
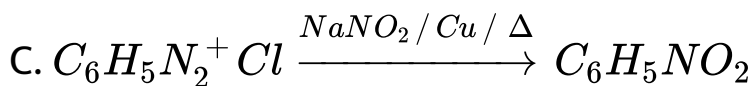
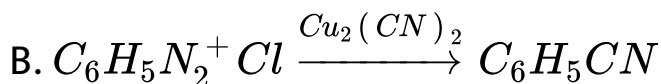
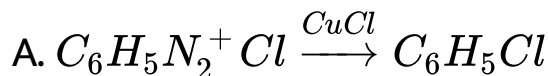
- A. because of unsaturation benzene easily undergoes addition
- B. there are two types of C - C bonds in benzene molecule
- C. there is cyclic delocalisation of π -electrons in benzene
- D. monosubstitution of benzene gives three isomeric products.

Answer: A::B::D



View Text Solution

2. Which of the following are examples of Sandmeyer's reaction?



Answer: A::B



View Text Solution

3. Which of the following statement(s) is/are incorrect for cyclooctatetraene?

A. Cyclooctatetraene has all eight C - C bonds equal in length.

B. It is non-planar

C. It has $8n$ electrons.

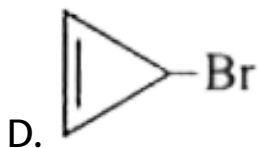
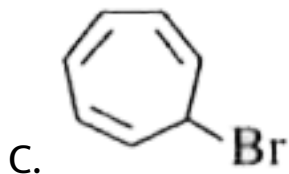
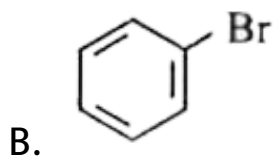
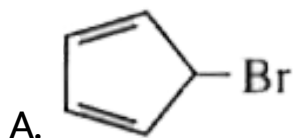
D. The molecule is antiaromatic.

Answer: A:D



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4. Mark out the molecule(s) which can give the precipitate of AgBr instantaneously on treatment with AgNO_3 .

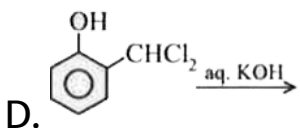
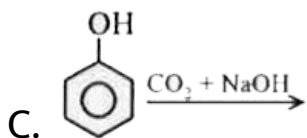
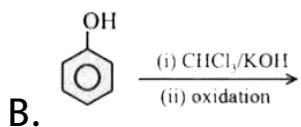
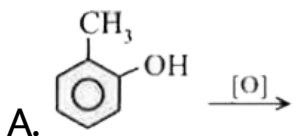


Answer: C::D



View Text Solution

5. Salicylic acid is obtained by using

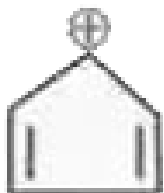


Answer: A::B



View Text Solution

6. Which of the following are not aromatic?



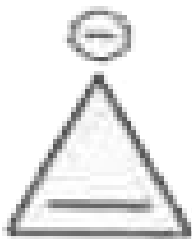
A.



B.



C.



D.

Answer: A::B::C::D

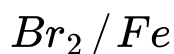


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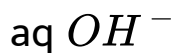
7. Which of the following statements are correct?

A. Chlorobenzene forms meta-

bromochlorobenzene upon treatment with



B. Chlorobenzene readily undergoes reaction with



C. The C-Cl bond in chlorobenzene is shorter than in chloroethane.

D. The C-Cl bond in chlorobenzene has partial double bond character.

Answer: C::D



View Text Solution

8. Salicylic acid is used to get

A. Oil of winter green

B. Salol

C. Aspirin

D. Anisole.

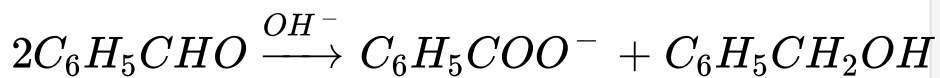
Answer: A::B::C



View Text Solution

9. Which of the following statements are incorrect?

A.



is an example of disproportionation reaction.

B. Benzaldehyde reduces Fehling's solution.

C. Hydroxy benzaldehyde is major product obtained when phenol is treated with $CHCl_3 / OH^-$

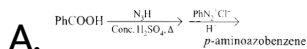
D. Gattermann-Koch reaction involves electrophilic aromatic substitution.

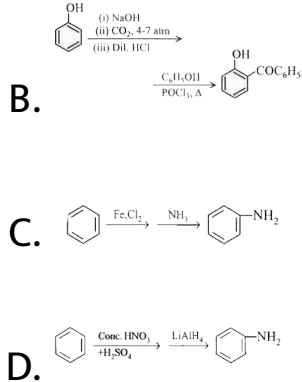
Answer: B::C



View Text Solution

10. Choose the incorrect reactions.





Answer: B::C::D

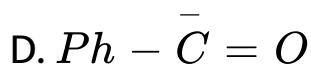
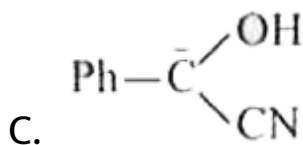
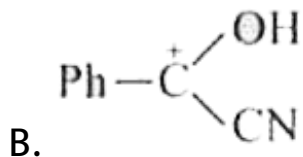
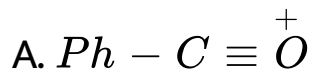


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Wb Jee Previous Years Questions Category 1 Single Option Correct Type

1. In the following species, the one which is likely to be the intermediate during benzoin condensation of

benzaldehyde, is



Answer: C



View Text Solution

2. When aniline is nitrated with nitrating mixture in ice cold condition, the major product obtained is

- A. p-nitroaniline
- B. 2,4-dinitroaniline
- C. o-nitroaniline
- D. m-nitroaniline

Answer: A



View Text Solution

3. The reaction of aniline with chloroform under alkaline conditions leads to the formation of

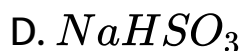
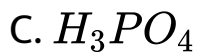
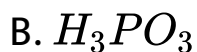
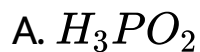
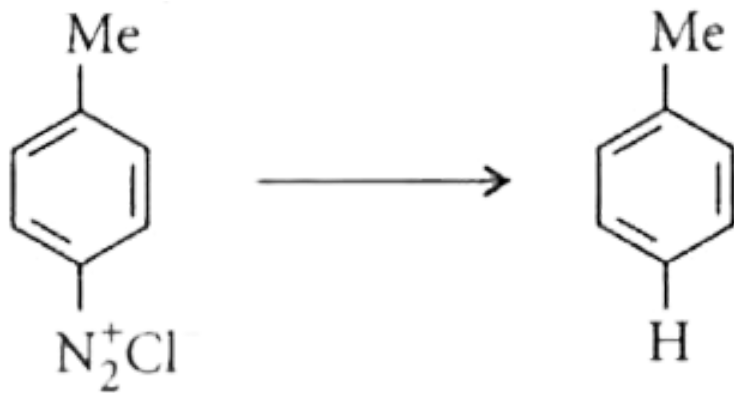
- A. phenyl cyanide
- B. phenyl isonitrile
- C. phenyl cyanate
- D. phenyl isocyanate

Answer: B

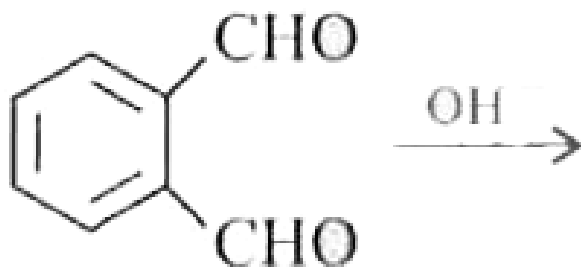


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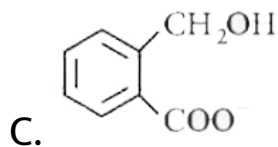
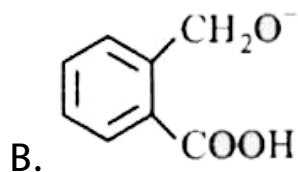
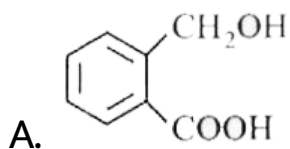
4. The reagent with which the following reactions is best accomplished is

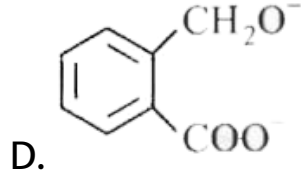


Answer: A



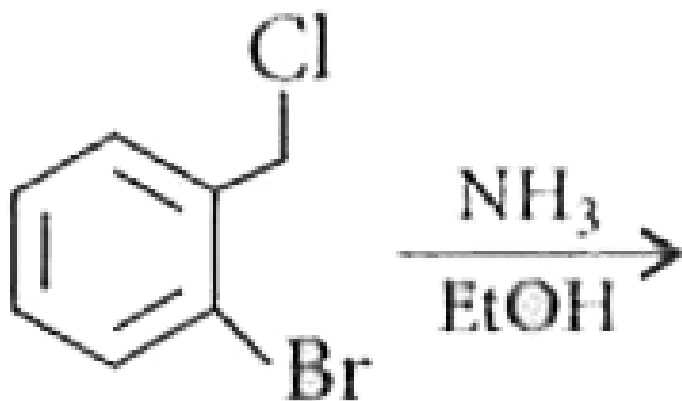
The product of the above reaction is



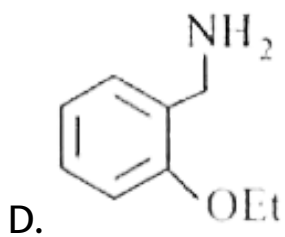
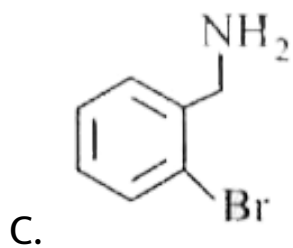
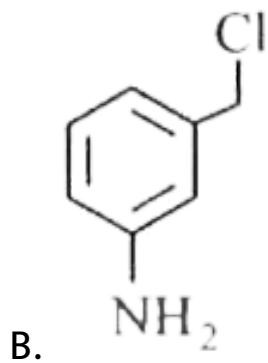
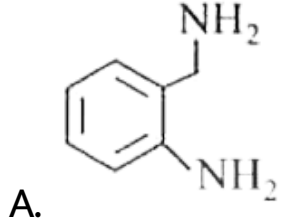


Answer: C

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The product of the above reaction is



Answer: C



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7. 1,4-Dimethylbenzene on heating with anhydrous $AlCl_3$ and HCl produces

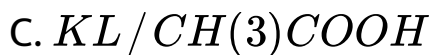
- A. 1,2-dimethylbenzene
- B. 1,3-dimethylbenzene
- C. 1,2,3-trimethylbenzene
- D. ethylbenzene

Answer: B



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8. Best reagent for nuclear iodination of aromatic compounds is

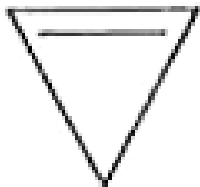


Answer: D

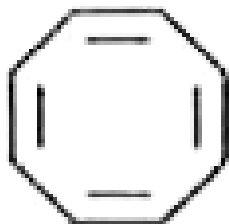


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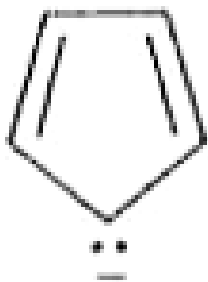
9. From the following compounds choose the one which is not aromatic.



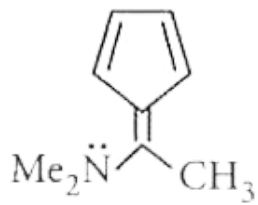
A.



B.



C.



D.

Answer: B



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10. Which of the following reactions will not result in the formation of carbon-carbon bonds?

- A. Cannizzaro reactio
- B. Wurtz reaction
- C. Reimer - Tiemann reaction
- D. Friedel - Crafts acylation

Answer: A



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11. The correct order of acid strengths of benzoic acid (X), peroxybenzoic acid (Y) and p-nitrobenzoic acid (Z) is

A. $Y > Z > X$

B. $Z > Y > X$

C. $Z > X > Y$

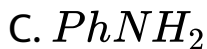
D. $Y > X > Z$

Answer: C



View Text Solution

12. The compound that would produce a nauseating smell//odour with a hot mixture of chloroform and ethanolic potassium hydroxide is



Answer: C



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13. The yield of acetanilide in the reaction (100% conversion) of 2 moles of aniline with 1 mole of acetic anhydride is

A. 270 g

B. 135 g

C. 67.5 g

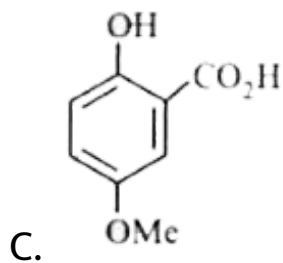
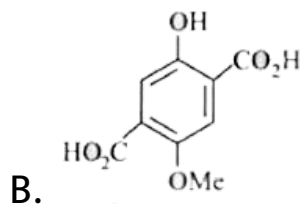
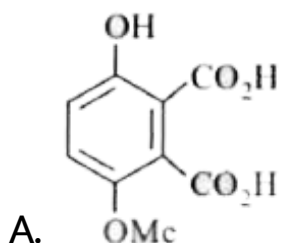
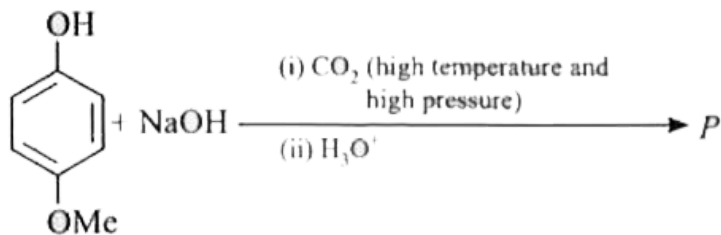
D. 177 g

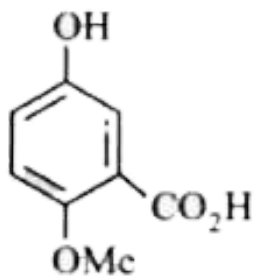
Answer: B



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14. The structure of the product P of the following reaction is



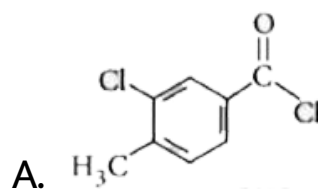
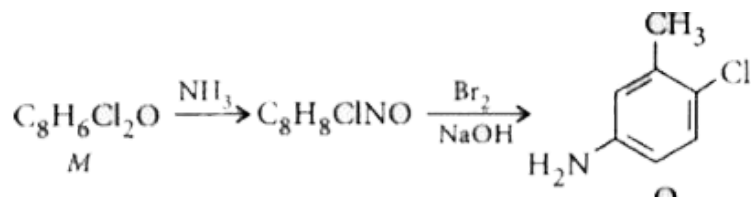


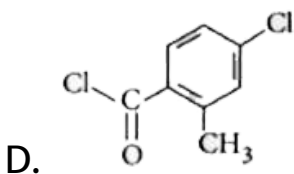
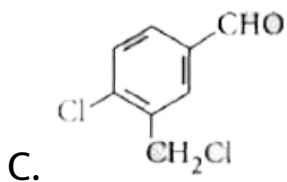
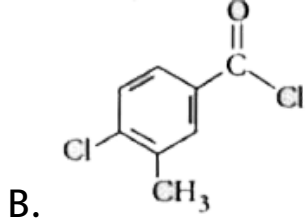
D.

Answer: C

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15. Identify 'M' in the following sequence of reactions:





Answer: B



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16. Methoxybenzene on treatment with HI Produce

A. iodobenzene and methanol

B. phenol and methyl iodide

C. iodobenzene and methyl iodide

D. phenol and methanol.

Answer: B



View Text Solution

17. If aniline is treated with conc. H_2SO_4 and heated at $200^\circ C$, the product is

A. anilinium sulphate

B. benzenesulphonic acid

C. m-aminobenzenesulphonic acid

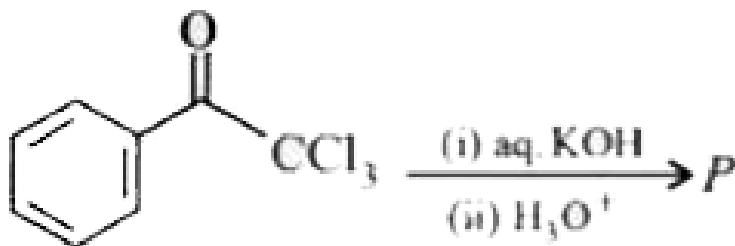
D. sulphanilic acid.

Answer: D

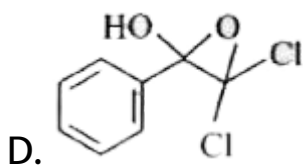
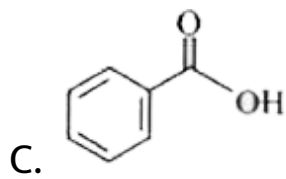
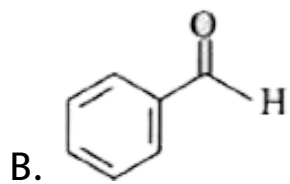
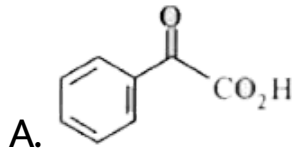
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18. One of the products of the following reactions is

P.



Structure of P is

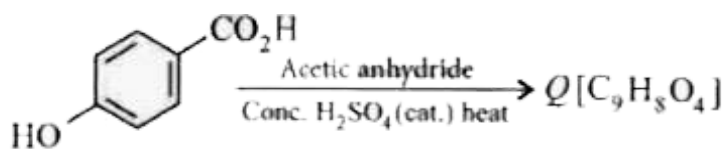


Answer: C

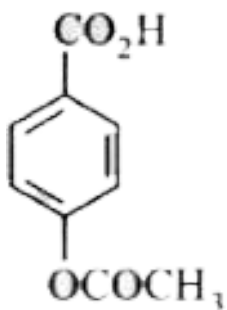


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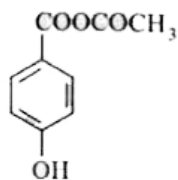
19. For the reaction below, the product is Q.



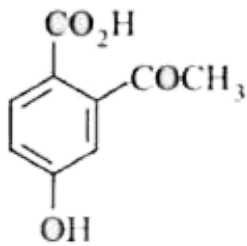
The compound Q is



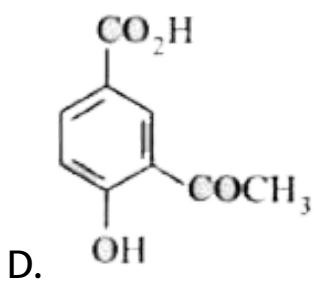
A.



B.



C.

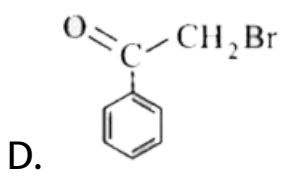
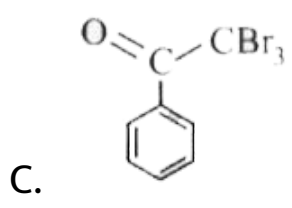
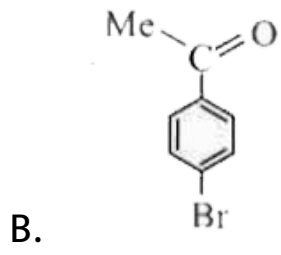
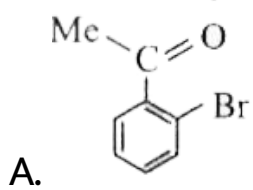


Answer: A

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Wb Jee Previous Years Questions Category 2 Single Option Correct Type

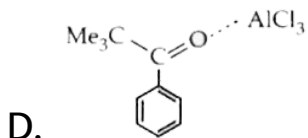
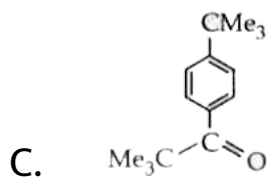
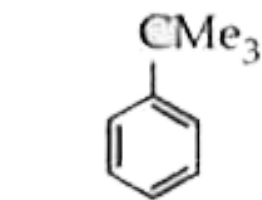
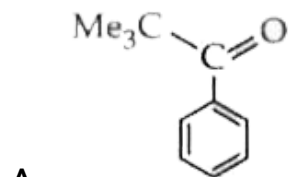
1. Bromination of PhCOMe in acetic acid medium produces mainly



Answer: D

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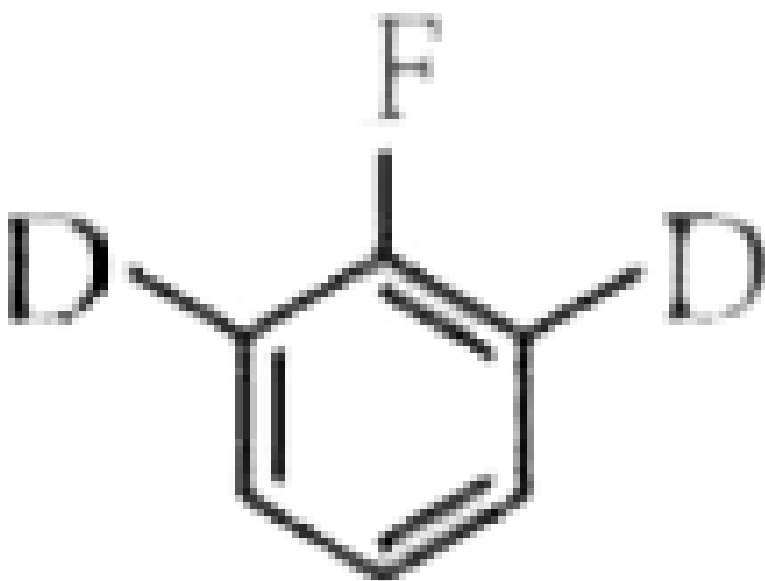
2. Reaction of benzene with Me_3CCOCl in the presence of anhydrous $AlCl_3$ gives



Answer: B

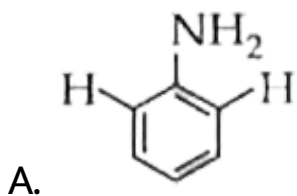


3. Treatment of

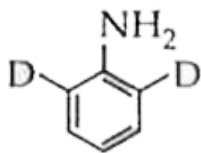


with

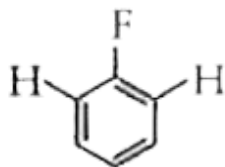
$NaNH_2 / liq. NH_3$ gives



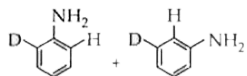
B.



C.



D.



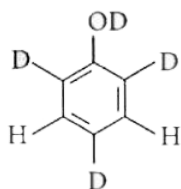
Answer: D



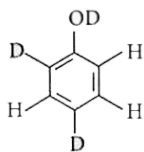
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4. When phenol is treated with D_2SO_4 / D_2O , some of the hydrogens get exchanged. The final product in this exchange reaction is

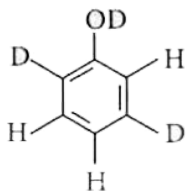
A.



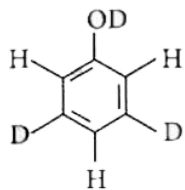
B.



C.



D.

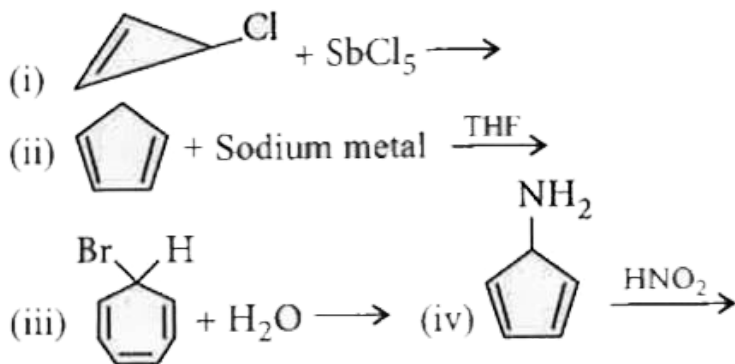


Answer: A



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5. The total number of aromatic species generated in the following reactions is



A. zero

B. 2

C. 3

D. 4

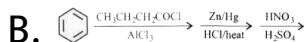
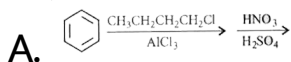
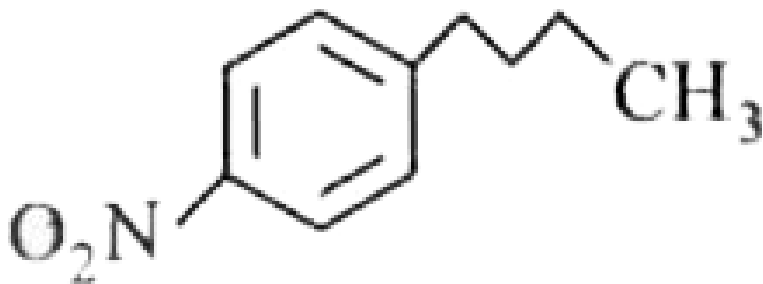
Answer: C

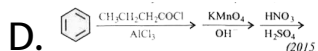


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Wb Jee Previous Years Questions Category 2 One Or More Option Correct Type

1. Identify the correct method for the synthesis of the compound shown below from the following alternatives.





Answer: B

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2. Amongst the following compounds, the one(s) which readily react with ethanolic KCN is

A. ethyl chloride

B. chlorobenzene

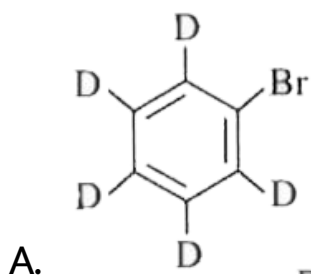
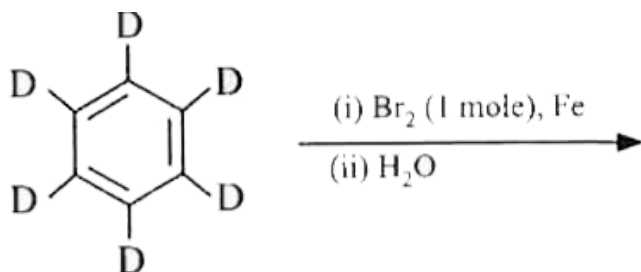
C. benzaldehyde

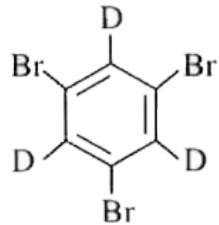
D. salicylic acid.

Answer: A::C

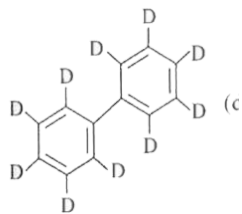
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3. The major product(s) obtained from the following reaction of 1 mole of hexadeuteriobenzene is / are

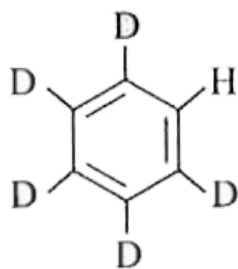




B.



C.



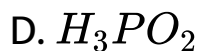
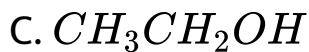
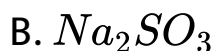
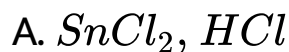
D.

Answer: A



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4. The reduction of benzenediazonium chloride to phenyl hydrazine can be accomplished by



Answer: A::B



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