Question Bank

Practical **O**rganic **C**hemistry (*3rd Stage*)

Dr. Peshawa Osw

2nd Semester

Q 1/ Write the detail mechanism for p-methylbenzil (benzilic zcid rearrangement)

Q 2/ Complete the following reactions:

1. Anthracene $\xrightarrow[\Delta]{Na,\ C_2H_5OH}$ **?**

2. 4-Carboxybenzaldehyde $\xrightarrow[Ethanol]{NaBH_4}$ **?**

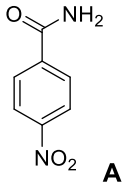
3. p-methoxyaniline + Succinic anhydride $\xrightarrow[room\ temp.]{Acetone}$ **?**

Q 3/ Define Indole, and then explain its electrophilic substitution reaction.

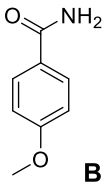
Q 4/ Write the essential characteristics of Diels-Alder cycloaddition reaction.

Q 5/ Write the detailed mechanism for the preparation of Quinoxaline (starting from Benzil in acidic medium).

Q 6/ Arrange the following compounds according to increase their Rate of Hofmann reaction.



A



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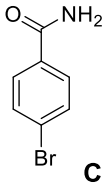

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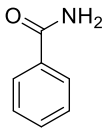


D

Q 7/ What term describes the stereochemical relationship between (1R,2R)-hydrobenzoin and (*1S,2S*)-hydrobenzoin?

Q 8/ Write the detail mechanism for the reaction of benzil and o-phenylene diamine in acidic medium.

Q 9/ Complete the following reactions:

2 Benzaldehyde + Acetone $\xrightarrow{NaOH}$

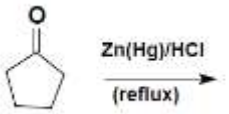
N-benzylideneaniline + H_2O $\xrightarrow{HCl}$

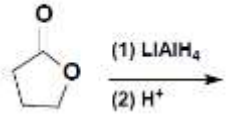
Cyclopentylamide $\xrightarrow{Br_2\ /\ NaOH}$

Cyclohexane-1,2-dione $\xrightarrow[H_2O/\ Ethanol]{?}$ Δ

Q 10/ In the last step of benzil reduction, the water must be added with heating. Explain why?

Q 11/ Show the major organic product(s) for each of the following equations.



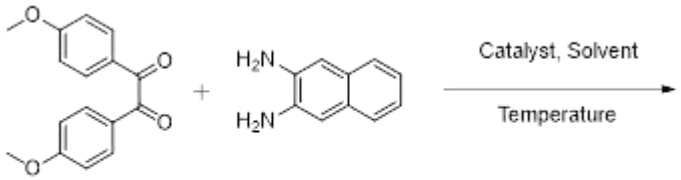


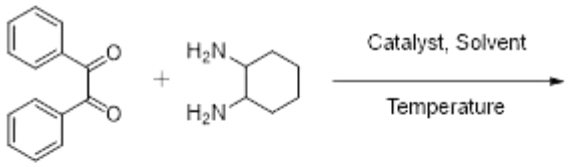
Q 12/ Define the following:

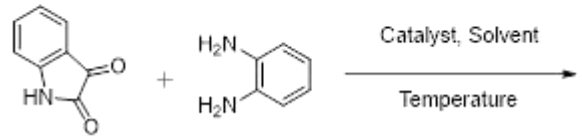
1- Hydrolysis

2- Schiff base

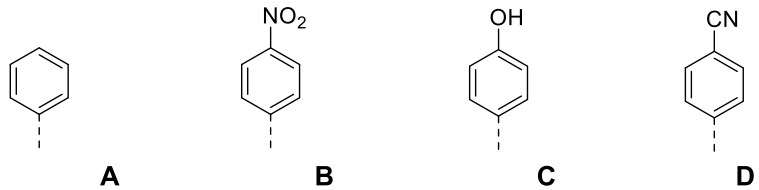
Q 13/ Complete the following reactions:







Q 14/ Arrange the following compounds according to increase their Migration of aryl groups toward benzil-benzilic acid rearrangement reaction.



Q 15/ Write the reason of the following:

1- Diels- Alder reaction takes place easily between cyclopentadien and malic anhydride