



CHEMISTRY

BOOKS - MS CHOUHAN CHEMISTRY (HINGLISH)

PHENOLS AND ARYL HALIDES

Solved Problem

1. Rank the following compounds in order of increasing acidity.



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2. Assume that each of the following mixtures was added to a flask or a separatory funnel that contained diethyl ether (as an organic solvent) and mixed well. In which layer (diethyl ether or water) would the organic compound predominate in each case, and in what form would it exist (in its neutral form or as its conjugate base)?

A. 

B. 

C. 

D. 

Answer:



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3. Consider the sulfonation reactions of phenol shown above. Which sulfonation product is more stable, ortho or para?



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4. Consider the sulfonation reactions of phenol shown above. For which sulfonation product is the free energy of activation lower?



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5. Show how you could synthesize allyl phenyl ether phenol and allyl bromide



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6. What is the product of the following reaction?



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7. Rank the following compounds in order of increasing acidity.



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8. Assume that each of the following mixtures was added to a flask or a separatory funnel that contained diethyl ether (as an organic solvent) and mixed well. In which layer (diethyl ether or water) would the organic compound predominate in each case, and in what form would it exist (in its neutral form or as its conjugate base)?

A. 

B. 

C. 

D. 

Answer:



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9. Consider the sulfonation reactions of phenol shown above. Which sulfonation product is more stable, ortho or para?



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10. Consider the sulfonation reactions of phenol shown above. For which sulfonation product is the free energy of activation lower?



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11. Show how you could synthesize allyl phenyl ether phenol and allyl bromide



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12. What is the product of the following reaction?



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Additional Objective Questions Single Correct Choice Type

1. which of the following is the best method for preparation of picric acid ?

A. 

B. 

C. 

D. 

Answer: B



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2. phenol can be distinguished from ethanol by the reaction with _____.

A. Br_2 / water

B. $NaOH$


C. Neutral $FeCl_3$

D. All the above

Answer: D



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3. The reaction of  (##MST_MSC_JMA_ORG_CHE_C19_E02_009_Q01.png" width="80%") with HBr gives

A. 

B. 

C. 

D. 

Answer: B



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4. Which one of the following compounds is most reactive for S_N2Ar reaction

A. 

B. 

C. 

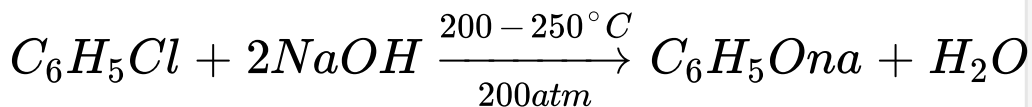
D. 

Answer: C



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5. Following equation illustrates



- A. Dow's process
- B. Kolbe's process
- C. Carbylamine test
- D. Haloform reaction

Answer: A



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6. Which of the following correctly ranks the aryl halides in increasing order of reactivity towards sodium methoxide in methanol?

A. 

B. 

C. 

D. 

Answer: C



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7. Phenol, when it first reacts with concentrated sulphuric acid and then with concentrated nitric acid, gives

A. 2,4,6-trinitrobenzene.

B. o-nitrophenol.

C. p-nitrophenol.

D. nitrobenzene.

Answer: B



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8. Which of the following is most reactive toward S_NAr ?

A. 

B. 

C. 

D. 

Answer: D



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9. When phenol is treated with excess of bromine water, it gives

- A. m-bromophenol.
- B. o-and p-bromophenol.
- C. 2,4-dibromophenol.
- D. 2,4,6-tribromophenol.

Answer: D



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10. Benzene diazonium chloride on reaction with phenol in weakly basic medium gives

A. diphenyl ether.

B. p-hydroxy azobenzene.

C. chlorobenzene.

D. benzene.

Answer: B



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11. which of the following is the best method for preparation of picric acid ?

A. 

B. 

C. 

D. 

Answer: B



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12. phenol can be distinguished from ethanol by the reaction with _____.

A. Br_2 / water

B. $NaOH$


C. Neutral $FeCl_3$

D. All the above

Answer: D



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13. The reaction of  (##MST_MSC_JMA_ORG_CHE_C19_E02_009_Q01.png" width="80%") with HBr gives

A. 

B. 

C. 

D. 

Answer: B



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14. Which one of the following compounds is most reactive for S_N2A_r reaction

A. 

B. 

C. 

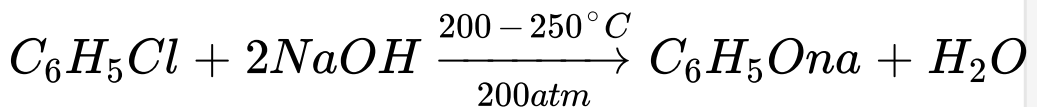
D. 

Answer: C



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15. Following equation illustrates



- A. Dow's process
- B. Kolbe's process
- C. Carbylamine test
- D. Haloform reaction

Answer: A



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16. Which of the following correctly ranks the aryl halides in increasing order of reactivity towards sodium methoxide in methanol?

A. 

B. 

C. 

D. 

Answer: C



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17. Phenol, when it first reacts with concentrated sulphuric acid and then with concentrated nitric acid, gives

A. 2,4,6-trinitrobenzene.

B. o-nitrophenol.

C. p-nitrophenol.

D. nitrobenzene.

Answer: B



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18. Which of the following is most reactive toward S_NAr ?

A. 

B. 

C. 

D. 

Answer: D



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19. When phenol is treated with excess of bromine water, it gives

- A. m-bromophenol.
- B. o-and p-bromophenol.
- C. 2,4-dibromophenol.
- D. 2,4,6-tribromophenol.

Answer: D



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20. Benzene diazonium chloride on reaction with phenol in weakly basic medium gives

A. diphenyl ether.

B. p-hydroxy azobenzene.

C. chlorobenzene.

D. benzene.

Answer: B



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