

## Kakatiya University, Warangal

### B.Sc. III Year Practical Paper III (Organic Chemistry, 2010-11 onwards) Experiments - Question Bank

- A (1) Prepare a pure sample of phenyl azo  $\beta$ -naphthol.  
(Or)  
Prepare a pure sample of *p*-bromo acetanilide from acetanilide.
- (2) Prepare a pure sample of benzoic acid from benzyl chloride.  
(Or)  
Prepare a pure sample of *p*-bromoacetanilide from acetanilide.
- (3) Prepare a pure sample of  $\beta$ -naphthyl methyl ether  
(Or)  
Prepare a pure sample of *m*-nitro aniline from *m*- benzene.
- (4) Prepare a pure sample of nitrobenzene from benzene.  
(Or)  
Prepare a pure sample of *p*-bromoacetanilide from acetanilide.
- (5) Prepare a pure sample of *p*-bromoacetanilide from acetanilide.  
(Or)  
Prepare a pure sample of neroline from  $\beta$ -naphthol.
- (6) Prepare a pure sample of nitrobenzene from benzene.  
(Or)  
Prepare a pure sample of Benzoyl aniline.
- (7) Prepare a pure sample of  $\beta$ -naphthylmethyl ether from  $\beta$ -naphthol.  
(Or)  
Prepare a pure sample of nitrobenzene from benzene.
- (8) Prepare a pure sample of benzilidine aniline from benzaldehyde.  
(Or)  
Prepare a pure sample of  $\beta$ -naphthyl methyl ether from  $\beta$ -naphthol.
- (9) Prepare a pure sample of methyl *p*-nitrobenzoate from *p*-nitrobenzoic acid.  
(Or)  
Prepare a pure sample of *p*-bromoacetanilide from acetanilide.
- (10) Prepare a pure sample of 2,4,6-tribromophenol.  
(Or)  
Prepare a pure sample of benzoic acid from benzyl chloride.
- (11) Prepare a pure sample of *p*-bromoacetanilide from acetanilide.  
(Or)  
Prepare a pure sample of benzoic acid from benzyl chloride.
- (12) Prepare a pure sample of benzanilide from aniline.  
(Or)  
Prepare a pure sample of  $\beta$ -naphthyl methyl ether from  $\beta$ -naphthol.

- B (13) Determine the purity of the given Organic Compound by TLC.  
(Or)  
Separate the given two component mixture of organic compounds  
(Aniline + Naphthalene).
- (14) Separate the ortho and para-nitroaniline mixture by column chromatography.  
(Or)  
Separate the given two component mixture of organic compounds  
(Benzoic acid + Benzophenone).

- C (15) Identify the functional group of the given organic compounds by systematic analysis and prepare a rational derivative.



**Kakatiya University, Warangal****B.Sc. III Year Practical Paper III (Organic Chemistry, 2010-11 onwards)****Question Bank – Objectivity type**

1. How do you distinguish an aliphatic compound from an aromatic compound?
2. Define Boiling point.
3. What is the use of a separating funnel?
4. Write the equation for the carbylamine test.
5. Write the equation for the preparation of derivative for aniline.
6. Write the reaction of aniline with cold sodium nitrite and dilute HCl.
7. Why do you get an unpleasant smell during carbylamine reaction?
8. Write Schotten Baumann reaction.
9. How do you prepare diazonium chloride solution?
10. How do you perform azodye test?
11. Write the equation for the reaction of aniline with Br<sub>2</sub> in aqueous medium.
12. Write the solubility classification for an aromatic primary amine.
13. Give an identification test for primary amine.
14. Write an example for an aliphatic tertiary amine.
15. What is the distinguishing test for phenol?
16. Why phenolic compounds are soluble in dilute aqueous sodium hydroxide solution?
17. Write an equation for the preparation of benzoyl derivative of phenol.
18. What is the product formed when phenol is treated with bromine in water?
19. Why phenols are more acidic than alcohols?
20. Write the structure of phenolphthalein.
21. What is the product formed when β-naphthol reacts with benzoyl chloride in basic medium?
22. Write the solubility classification for phenol.
23. Write the equation for the preparation of a derivative for phenol.
24. Write the structure of phenyl-azo-2-naphthol.
25. Write an equation for the preparation of a derivative for glucose.
26. What is the composition of Fehling's reagent?
27. What is the composition of Tollen's reagent?
28. Name the reagent used for the preparation of *m*-nitroaniline from *m*-dinitrobenzene.
29. How do you prepare Tollen's reagent in the laboratory?
30. Write the structures of D-glucose and L-glucose.
31. Write the equation for the reaction between glucose and phenyl hydrazine.
32. Why do you get a red precipitate when glucose is treated with Fehling's solution?
33. Why glucose forms silver mirror when treated with Tollen's reagent?
34. How do you perform Molisch test?
35. What is the composition of Molisch reagent?
36. Write the structure of glucosazone.
37. Write the Haworth ring structure for glucose.

38. Name the by-product formed during the preparation of glucosazone.
39. How do you distinguish glucose from fructose?
40. Write the structure of fructosazone.
41. Why glucose consumes only 3 moles of phenyl hydrazine and converts into glucosazone?
42. Why glucose is insoluble in ether?
43. Why glucose is soluble in aqueous solutions?
44. Write a test for the identification of methyl ketone.
45. Write the structure of 2,4-DNP.
46. Write any two tests to distinguish aldehydes from ketones.
47. Write the equation for the reaction of an aldehyde with Tollen's reagent.
48. Write the structure of the product when benzaldehyde is treated with 2,4-DNP.
49. Write the structure of the product when benzaldehyde is treated with hydroxyl amine.
50. How do you distinguish acetophenone from benzophenone?
51. What happens when acetaldehyde is treated with semicarbazide?
52. Write the equation for Acetophenone + Phenyl hydrazine.
53. Write the equation for Formaldehyde + 2,4-DNP.
54. How is Schiff's reagent prepared?
55. Write the structure of benzophenone oxime.
56. Suggest a simple test to distinguish acetaldehyde from benzaldehyde?
57. Write the solubility classification for acetophenone.
58. What happens when acetaldehyde is treated with sodium bisulphate. Write the equation.
59. Suggest any one derivative for acetophenone?
60. Write the solubility classification for benzoic acid.
61. What happens when benzoic acid is treated with sodium bicarbonate ( $\text{NaHCO}_3$ ).
62. Why carboxylic acids are more acidic than phenols?
63. Write a distinguishing test for the identification of carboxylic acids.
64. Write the equation for the preparation of a derivative for carboxylic acid.
65. What happens when carboxylic acid is treated with alcohol in presence of a mineral acid?
66. Write the equation for the preparation of nitro benzene.
67. Write the equation for the production of nitronium ion in nitration mixture.
68. Why bromine goes to para position when acetanilide is brominated?
69. Write the equation for the conversion of benzyl chloride to benzoic acid.
70. What is the chemical name of neroline. Write its structure?
71. How do you obtain neroline from  $\beta$ -naphthol?
72. Write an example for a condensation reaction.
73. Write equation for the formation of Iodoform from acetone.
74. Write the equation for an esterification reaction.
75. What is the reagent used in the methylation of  $\beta$ -naphthol?
76. Write the equation for the preparation of acetanilide from aniline.
77. Write the equation for the reaction between aniline and benzaldehyde.
78. Write the equation for the reaction between acetaldehyde and hydroxyl amine hydrochloride.
79. What happens when glucose is burnt on a spatula?.

80. An organic compound 'X' was soluble in ether, 10% NaOH and 10% NaHCO<sub>3</sub> and insoluble in 10% HCl. Name the functional group in the compound?
81. An organic compound 'Y' was soluble in 10% HCl, 10% NaHCO<sub>3</sub> and 10% NaOH and insoluble in ether. Predict the nature of the compound?
82. An organic compound 'A' was soluble in 10% HCl and ether. It was insoluble in 10% NaOH and 10% NaHCO<sub>3</sub>. Predict the nature of the functional group?
83. An organic compound 'P' was soluble in ether and 10% NaOH. It was insoluble in 10% HCl and 10% NaHCO<sub>3</sub>. Predict the nature of the functional group?
84. Which of the following will not form iodoform?  
a) Acetaldehyde b) Acetone c) Methanol d) Acetophenone
85. Write the equation for the preparation of methyl-*p*-nitrobenzoate from *p*-nitro benzoic acid.
86. Write the equation for the preparation of *m*-nitroaniline to form *m*-dinitrobenzene.
87. Based on the solubility, how a mixture of aniline and naphthalene are separated.
88. Give an example of how a organic mixture is separated by steam distillation?
89. Write an equation for benzylation of Aniline.
90. Write an equation for benzylation of phenol.
91. Write an equation for Acetylation of phenol.
92. Write an equation for Acetylation of Aniline.
93. Write an equation for the preparation of *p*-nitroacetanilide in the laboratory.
94. How do you calculate the R<sub>f</sub> value? Write equation?
95. Write equation for the preparation of 2,4-Dinitro phenyl hydrazone of 2-butanone.
96. Write equation for the preparation of 2,4-Dinitro phenyl hydrazone of acetone.
97. What is Chromatography?
98. What is thin layer chromatography?
99. What is spotting?
100. Give an example of reaction by microwave assisted green synthesis?
101. Thin layer in TLC is made of -----.