

**B. Pharm.- IInd Year (CBCS Pattern) Sem-III**  
**BP 301T - Pharmaceutical Organic Chemistry-II**

Time : Three Hours



Max. Marks : 75

- Notes :
1. Diagrams and Chemical equation should be given wherever necessary.
  2. Illustrate your answers wherever necessary with the help of neat sketches.
  3. All questions are compulsory.

## 20

- 1) Which catalyst is used during halogenation of benzene-  
a) Lewis acid  
b) Lewis base  
c) Platinum  
d) Ni/Pt
- 2)  $\pi$ -bonds in benzene spread over all six carbons, hence they are called as-  
a) Spectators  
b) Localized  
c) Delocalized  
d) Invaders
- 3) Which of the following is used in the manufacture of bakelite?  
a) Phenol  
b) Formaldehyde  
c) Ethyl alcohol  
d) Both a & b
- 4) Picric acid forms when phenol reacts with-  
a) Hydrogen  
b) Nitric acid  
c) Sulphuric acid  
d) Formaldehyde
- 5) The correct order of reactivity of halides with amines is-  
a)  $RI > RBr > RCl$   
b)  $RI > RCl > RBr$   
c)  $RBr > RCl > RI$   
d)  $RCl > RBr > RI$
- 6) Electron releasing group on aromatic amines-  
a) Decreases the basicity  
b) Increases basicity  
c) Neutral the basicity  
d) None of above
- 7) Aromatic acid when react with ammonia it forms-  
a) Hydro carbon  
b) Acid chloride  
c) Amide  
d) Ketone
- 8) Which of the following is responsible for rancidity-  
a) Alkali  
b) Ketones  
c) Aldehydes  
d) Alcohols
- 9) Electrophilic substitution reactions in aromatic acid occurs only at-  
a) o-position  
b) m-position  
c) p-position  
d) none of above
- 10) The main sources of polynuclear hydrocarbon are-  
a) Biogas & petroleum  
b) Natural gas  
c) Petroleum  
d) Coal tar & petroleum

- 11) Electrophile attack on naphthalene at-
  - a)  $C_1$
  - b)  $C_2$
  - c)  $C_3$
  - d)  $C_4$
- 12) Which of the following cycloalkanes has the least ring strain?
  - a) cyclopropane
  - b) cyclobutane
  - c) cyclopentane
  - d) cycloheptane
- 13) Which of the following is important in testing the purity of butter & ghee-
  - a) RM value
  - b) Acid value
  - c) Iodine value
  - d) Saponification value
- 14) Electron withdrawing group increases the acidic strength of aromatic acid by-
  - a) Destabilize anion
  - b) Stabilize anion
  - c) Both a & b
  - d) None of above
- 15) During sulphonation of aromatic amines which isomer predominates?
  - a) o-isomer
  - b) m-isomer
  - c) p-isomer
  - d) All of above
- 16) Phenol can be distinguished from ethanol by the reaction with-
  - a)  $Br_2$  / water
  - b) Na
  - c) Neutral  $FeCl_3$
  - d) All of above
- 17) Acyl chlorides are made by reacting aromatic acid with-
  - a)  $PCl_3$
  - b)  $PCl_5$
  - c)  $SOCl_2$
  - d) All
- 18) Anthracene on oxidation with  $Na_2Cr_2O_7$  to give-
  - a) Phthalic acid
  - b) Benzoic acid
  - c) Anthraquinone
  - b) Benzophenone
- 19) Anthraquinone on reduction with Zn dust in aq.  $NH_4OH$  Yields –
  - a) Anthraquinol
  - b) Anthrone
  - c) Bianthryl
  - d) 9, 10 – dihydroanthrol
- 20) Sulphonation of phenol at 370 K gives-
  - a) o-isomer
  - b) p-isomer
  - c) m-isomer
  - d) both a & b

2. Short answer questions: **any seven.**

**7x5  
=35**

- 1) Write about hydrogenation of lipids.
- 2) Explain the effects of substituents on acidity of aromatic acids.
- 3) Give the mechanism of nitration of benzene.
- 4) Write a note on Reimer – Tiemann reaction.

- 5) Define aromatic amines. How they are classified?
- 6) Give two methods of preparation of cyclopropane.
- 7) How will you synthesize naphthols?
- 8) Define & Explain :
  - a) Acid value
  - b) Saponification value
- 9) How will you prepare benzene acid from –
  - a) Primary alcohol
  - b) Aniline

**3. Long answer questions any two.**

**2x1  
=20**

- 1) Write a detailed note on analysis of fats & oils.
- 2) Describe the synthesis methods & chemical reactions of naphthalene.
- 3) Explain in detail the chemical properties of phenol.

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