Seat No: _____ **Enrollment No: _____**

PARUL UNIVERSITY

FACULTY OF PHARMACY

B. Pharm. Winter 2019-20 Examination

Semester: 3 **Date: 19/11/2019**
Subject Code: BP301T **Time: 2.00 pm to 5.00 pm**
Subject Name: Pharmaceutical Organic Chemistry II **Total Marks: 75**

Instructions:
1. Figures to the right indicate maximum marks.
2. Make suitable assumptions wherever necessary.

Q.1 Multiple Choice Questions (MCQs) (1 Mark Each) **(20)**

1. For reaction of Ethylbenzene, the ethyl group is considered
   a) ortho director b) ortho-para director
   c) meta director d) ortho-meta director
2. The electrophile which is considered to be the active agent in the nitration of benzene is
   a) NO_2^- b) NO^+
   c) NO_2^+ d) HNO_2^+
3. The carbon atoms in benzene ring are
   a) sp hybridized b) sp^3 hybridized
   c) sp^2 hybridized d) None of this
4. Aniline react with nitrous acid at low temperature to give
   a) Benzene b) a diazonium salt
   c) a nitrile d) a nitrile salt
5. Which of the following is the strongest acid ?
   a)Ethanol b)Phenol
   c)Anisole d)Benzoic acid
6. Sodium phenoxide react with CO_2 at 125° C under 5 atm pressure to give salicylic acid . This reaction is called as
   a) Kolbe reaction b) Wurtz reaction
   c) Perkin reaction d) Hell Volhard Zelinsky reaction
7. Which of the following will undergo substitution in the ortho and para position rather than in meta position
   a) Nitrobenzene b) Acetanilide
   c) Benzoic acid d) Benzaldehyde
8. Naphthalene undergoes reduction with H_2 in the presence of Pt catalyst at high temperature and pressure to give
   a) Phthalic acid b) Benzoic acid
   c) Decaline d) Tetralin
9. Benzene reacts with concentrated HNO_3 in the presence of concentrated H_2SO_4 to give nitrobenzene. This reaction is an example of
   a) Electrophilic addition b) Electrophilic substitution
   c) Nucleophilic addition d) Nucleophilic substitution
10. The degree of unsaturation of a fat can be determined by means of its
    a) Iodine number b) Saponification number
    c) Octane number d) Melting point
11. Saponification of a fat
    a) Produce glycerol and soap b)Always results in the formation of insoluble soap
    c) Is used in the production of detergents d) Is used in the production of Lactic acid
12. Phenol react with excess bromine water to give
    a)o and p bromophenol b)Bromobenzene
    c)2,4,6-Tribromophenol d)m-bromophenol

13. Which of the cycloalkane is not expected to have a ring strain?
    a)Cyclopropane b)Cyclobutane
    c)Cyclopentane d)None of this
14. Phenylmagnesium bromide react with CO_2 followed by acid hydrolysis to form
    a) Phenol b) Bromobenzene
    c) Benzoic acid d) Acetophenone
15. Which of the following compound is aspirin
    a) Methyl salicylate b) salicylic acid
    c) Phenyl salicylate d) Acetyl salicylic acid
16. When considering electrophilic aromatic substitution reactions electron withdrawing substituents (e.g. nitro) are described as...
    a) *Ortho/para* directing and activating b) *Ortho/para* directing and deactivating
    c) *Meta* directing and activating d) *Meta* directing and deactivating
17. Phenol react with excess bromine water to give
    a)o and p bromophenol b)Bromobenzene
    c)2,4,6-Tribromophenol d)m-bromophenol
18. Cycloalkanes have the same molecular formula as
    a) Alkanes b)Alkenes
    c)Alkynes d)Cycloalkenes
19. With respect to the electrophilic aromatic substitution of benzene which of the following is not true
    a) A non aromatic intermediate is formed b) Benzene act as an electrophile
    c) A proton is lost in final step d) Resonance forms are important
20. The most stable conformation of cyclohexane is
    a)Haworth form b)Boat form
    c)Newman form d)Chair form

Q.2 Long Answers (any 2 out of 3) (10 Mark Each) **(20)**

1. Explain following statement
   (i) Explain Resonance concept in p-nitro phenol
   (ii) Preparation of Phenol from Benzene
   (iii) Synthesis of Benzoic acid from Toluene
   (iv) 4-Chlorophenol is more acidic than phenol
   (v) Synthesis of Acetanilide from Aniline
2. What is electrophilic aromatic substitution reaction? Give the general mechanism of electrophilic aromatic substitution and explain mechanism of Sulphonation and Halogenation of Benzene.
3. Explain chemical properties of Fats and Oil.

Q.3 Short Answers (any 7 out of 9) (5 Mark Each) **(35)**

1. Write a note on Acidicity of Phenol and effect of substituents on acidity of Phenol.
2. Explain the reaction and mechanism of Riemer Tiemann reaction and Kolbe reaction
3. Discuss the stability of cycloalkanes on the basis of Baeyer strain theory.
4. Explain why C-C bond in cyclopropane are weaker than C-C bond in cyclohexane ?
5. Write a note on Saponification value and Iodine value.
6. Write down Structure and uses of Saccharin and Chloramine.
7. Write Haworth synthesis for preparation of Naphthalene and preparation of Anthracene.
8. Write Structure and medicinal uses of Diphenylmethane and Triphenylmethane
9. Write detail short notes on Huckel Rule for aromaticity.