

II B. Pharmacy I Semester Supplementary Examinations, Oct/Nov - 2020
PHARMACEUTICAL ORGANIC CHEMISTRY-II

Time: 3 hours

Max. Marks: 75

- Note: 1. Question paper consists of three parts (**Part-I, Part-II & Part-III**)
 2. Answer ALL (Multiple Choice) Questions from **Part-I**
 3. Answer any **TWO** Questions from **Part-II**
 4. Answer any **SEVEN** Questions from **Part-III**

PART - I

1. (i) The temperature preferred for diazotization of amines is (1M)
 (a) $>100^{\circ}\text{C}$ (b) $50-60^{\circ}\text{C}$ (c) $25-35^{\circ}\text{C}$ (d) $0-10^{\circ}\text{C}$
- (ii) group significantly deactivates the benzene ring (1M)
 (a) $-\text{OH}$ (b) $-\text{CH}_3$ (c) $-\text{NO}_2$ (d) $-\text{Cl}$
- (iii) Which of the following is the weakest acid? (1M)
 (a) Phenol (b) m-chlorophenol (c) p-nitrophenol (d) 3,4-dimethylphenol
- (iv) Which of the following shows anti-aromaticity? (1M)
 (a) cyclobutadiene (b) cycloheptatriene (c) cyclooctatriene (d) cyclopropene
- (v) Nucleophilic substitution reaction is relatively easy on ... (1M)
 (a) fluorobenzene (b) phenol (c) aniline (d) nitrobenzene
- (vi) Which of the following decolorizes bromine water? (1M)
 (a) aniline (b) nitrobenzene (c) benzoic acid (d) benzonitrile
- (vii) The intermolecular interactions specific for aromatic compounds is (1M)
 (a) hydrogen bonding
 (b) ionic bonding
 (c) $\pi-\pi$ interactions
 (d) induced dipole interactions
- (viii) Salicylic acid is (1M)
 (a) 2-hydroxybenzoic acid
 (b) 3-hydroxybenzoic acid
 (c) 4-hydroxybenzoic acid
 (d) 2,4-dihydroxybenzoic acid
- (xi) Which of the following rightly describes picric acid? (1M)
 (a) 2-nitrophenol (b) 2,4-dinitrophenol (c) 2,4,6-trinitrophenol (d) chlorophenol
- (x) Naphthalin upon oxidation with V_2O_5 followed by dehydration..... (1M)
 (a) Acetic anhydride (b) Salicylic acid (c) phthalic anhydride (d) no reaction
- (xi) Isomers obtained by rotation about a single bond are..... (1M)
 (a) optical isomers (b) enantiomers
 (c) conformational isomers (d) geometric isomers
- (xii) Which of the following compound has total planar structure? (1M)
 (a) ethane (b) ethanol (c) 2-butyne (d) propene
- (xiii) Which of the following compound has most acidic protons? (1M)
 (a) benzene (b) propyne (c) propene (d) 2-butyne
- (xiv) Which of the following is chemically most stable? (1M)
 (a) butane (b) butene (c) butyne (d) 2-butyne

- (xv) All the following are obtained from petroleum crude oil distillation EXCEPT (1M)
(a) hexane (b) kerosene (c) naphthalene (d) ethylbenzene
- (xvi) Ozonolysis of 2-methyl-but-2-ene results in (1M)
(a) acetone, acetaldehyde (b) formaldehyde, propanaldehyde
(c) formaldehyde, ethyl methyl ketone (d) butanaldehyde, formaldehyde
- (xvii) But-2-ene reacts with and give but-2,3-diol (1M)
(a) Conc KMnO_4 (b) Δ , Conc. KMnO_4 , acid (c) dil KMnO_4 (d) dil KMnO_4 , acid
- (xviii) Unsaturation in fatty acids will lower of oils. (1M)
(a) colour (b) viscosity (c) flammability (d) stability
- (xix) Which of the following pair DOES NOT represents constitutional isomers? (1M)
(a) Butane, 2-methylpropane (b) malic acid, fumaric acid
(c) 1-butene, 2-butene (d) acetic acid, 2-hydroxy acetaldehyde
- (xx) Addition of HBr to pent-2-ene in the presence of H_2O_2 results inas major (1M)
product.
(a) 1-bromopentane (b) 2-bromopentane (c) 3-bromopentane (d) 4-bromopentane

PART -II

2. a) Explain the mechanism, reaction conditions and applications of Friedel Crafts acylation reaction. (5M)
- b) Write a note on O/P-directory groups. (5M)
3. a) Why phenol is acidic? Discuss the factors influencing acidity of phenol. (5M)
- b) Write methods used for preparation of diazonium salts. (5M)
4. How do you achieve the following synthetic conversions? (10M)
(i) Aniline to chlorobenzene (ii) Phenol to salicylic acid

PART -III

5. With a neat sketch explain the concept of electron delocalization and its implications. (5M)
6. Give reasons for the following. (5M)
(i) Benzoic acid is stronger acid than phenol
(ii) HNO_3 needs the help of H_2SO_4 to act as a nitration agent
7. Classify fatty acids with examples. Write identification tests used for fixed oils. (5M)
8. Explain how saponification value is used to identify a fixed oil and determine its molecular weight? (5M)
9. Write oxidation and reduction reactions of naphthalene. (5M)
10. Discuss the structure and pharmaceutical significance of diphenylmethane derivatives. (5M)
11. Write structure, preparation and uses of (i) DDT (ii) Chloramine T (5M)
12. Write the principle, procedure and significance of Acid value. (5M)
13. What is conformational isomerism? Write its significance in pharmaceutical chemistry. (5M)