Name: **Enrolment No:**	UPES UNIVERSITY WITH A PURPOSE

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Theory Examination, December 2020

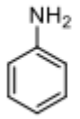
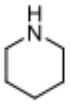
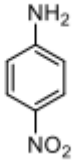
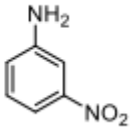
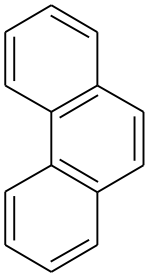
Course: Pharmaceutical Organic Chemistry-II
Semester: III
Program: B.Pharm **Time 03 hrs.**
Course Code: BP301T **Max. Marks: 75**
Instructions: Read the Question Paper Carefully.

SECTION A

S. No.	CO	Objective type Questions (10X2)	Marks
Q1			**20**
1	CO1	Rearrangement is possible in which of the following reactions? a) Nitration b) Sulphonation c) Friedel Craft's alkylation d) Friedel Craft's acylation	1
2	CO1	Select the group with only activating groups with reference to electrophilic substitution reactions a) NO_2, CH_3, CN, Cl b) Cl, NO_2, OH, NH_2 c) NH_2, Br, OH, OCH_3 d) None of the above	1
3	CO2	The basic strength of aniline a) Decreases with the presence of electron withdrawing group b) Increases with the presence of electron with drawing group c) Decreases with the presence of electron donating group d) No effect of any substituent	1
4	CO2	Reaction of benzene with conc. Sulphuric acid followed by reaction with ethyl chloride in presence of lewis acid will give: a) No product b) Meta chlorobenzoic acid c) Both ortho and para chloro benzoic acid d) Only para chloro benzoic acid	1
5	CO5	Methylcyclopropane on addition of HBr gives…….	1
6	CO5	The reaction of cyclopropane with ozone will give a) No reaction b) Ozonoid c) Glyceraldehyde d) A diol	1
7	CO3	Select the true statement a) All fats are triglycerides and all lipids are not b) All lipids are triglycerides while all fats are not	1

		c) All fats and lipids are triglycerides d) Neither fat nor lipids are triglycerides.	
8	CO3	The molecular formula of Stearic acid is a) $CH3(CH2)_{13}COOH$ b) $CH3(CH2)_{14}COOH$ c) $CH3(CH2)_{15}COOH$ d) $CH3(CH2)_{16}COOH$	1
9	CO3	Select the cyclic fatty acid a) Chaulomoogric acid b) lactobacillic acid c) Both of the above d) None of the above	1
10	CO4	An example of benzene fused ring system is……..	1
11	CO1	Rearrangement is not possible in which of the following reactions? a) Friedel Craft's alkylation b) Friedel Craft's acylation c) Both of the above d) None of the above	1
12	CO2	Select the group with only de-activating groups with reference to electrophilic substitution reactions a) NO_2, COOH, CN, Cl b) Br, NO_2, OCH_3, NH_2 c) COOH, CHO, CN, OCH_3 d) None of the above	1
13	CO1	Cyclopentadiene is considered as an antiaromatic compound because: (a) It is colored (b) It is a flat molecule (c) It has $4n\pi$ electrons (d) No conjugation in double bonds	1
14	CO3	The molecular formula of palmitic acid is a) $CH3(CH2)_{13}COOH$ b) $CH3(CH2)_{14}COOH$ c) $CH3(CH2)_{15}COOH$ d) $CH3(CH2)_{16}COOH$	1
15	CO2	Aniline does not undergo Friedel Craft's reaction a) True b) False c) It undergoes only Friedel Craft's acylation d) In undergoes only Friedel Craft's alylation	1
16	CO2	Due to ortho effect a) The acidic strength of phenol increases b) The basic strength of phenol increases c) The basic strength of aniline increases d) The acidic strength of aniline decreases	1

17	CO3	Select the true statement a) Diphenyl methane is more acidic than triphenyl methane b) Triphenyl methane is more acidic than triphenyl methane c) Both are not acidic d) Triphenyl methen does not exist.	1
18	CO5	Cyclopropane undergoes hydrohalogenation with mineral acids to form……..	1
19	CO3	Select the correct statement a) All fats are triglycerides and all lipids are not b) All lipids are triglycerides while all fats are not c) All fats and lipids are triglycerides d) Neither fat nor lipids are triglycerides.	1
20	CO1	Benzene can undergo following reactions most easily a) Electrophilic addition b) Nucleophilic addition c) Electrophilic substitution d) Nucleophilic substitution	1
SECTION B			
Long Answers (Answer two out of 3) 2X10			
Q2			**20**
1	CO4	Explain i) Why naphthalene undergoes electrophilic substitution reaction at first position. ii) Propose the reaction scheme for synthesis of 1-alkyl naphthalene from benzene and succinic anhydride.	10
2	CO2	Write a suitable method of synthesis of the following compounds i) Aryldizonium chloride ii) Resorcinol iii) 2-hydroxybenzoic acid iv) Salicylaldehyde	10
3	CO5	Apply Baeyer' strain theory to explain the un-stability of cyclopropane. How the theory fails to explain few observations? Explain.	10
SECTION C			
Short Answers (Answer 7 out of 9) 7X5			
Q3			**35**
1	CO1	Phenol undergo bromination at room temperature but benzene requires higher temperature and a catalyst (FeBr3). Explain why?	5
2	CO2	Rank the following compounds on the basis of their basicity and explain the reason for your ranking.	5

		A)  B)  C)  D) 	
3	CO2	Propose a synthetic scheme for the following interconversion Phenol to benzene and benzene to phenol.	5
4	CO4	What is Howarth method? Give all the concerned reactions.	5
5	CO4	Complete the following reactions:  $\xrightarrow{Br_2}$ A $\xrightarrow[FeBr_3]{Br_2}$ B	5
6	CO1	Give the structure and uses of the following compounds. i)Saccharin (ii) DDT (iii) BHC (iv) Chloramine	5
7	CO5	Explain reaction of 1,2-dibromopropane with malonic ester.	5
8	CO3	Define the following i) Iodine Value ii) Acid value	5
9	CO3	Explain the principle involved in determination of Reichert Meissl (RM) value and saponification value.	5
		Total	**75**