Name:

Enrolment No:



UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Theory Examination, December 2021

Course: Pharmaceutical Organic Chemistry-II

Semester: III

Program: B.Pharm
Course Code: BP301T
Time 03 hrs.
Max. Marks: 75

Instructions: Read the Question Paper Carefully.

SECTION	٨
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S. No.	CO	Objective type Questions (20X1)	Marks
Q1			20
1	CO1	Carbocation rearrangement is possible in Friedel Craft acylation. True or False?	1
2	CO1	Name a neutral electrophile.	1
3	CO2	Which is more basic nitroaniline or aniline?	1
4	CO5	If methylcyclopropane reacts with HBr the product is	1
5	CO2	Reaction of benzene with conc. HNO3 in presence of Sulphuric acid followed by reaction with ethyl chloride in presence of Lewis acid will give: a) No product b) Meta ethylnitrobenzene c) Both ortho and para ethyl nitro benzene d) Only para ethyl nitrobenzene	1
6	CO5	Which is more stable, cyclopropane or cyclopentane?	1
7	CO4	Naphthalene on reductive ozonlysis gives	1
8	CO4	In Haworth's synthesis of naphthalene, following catalysts are used a) AlCl ₃ b) Zn-Hg/ HCl c) Conc. H ₂ SO ₄ d) All of the above	1
9	CO3	Name a hydroxyl fatty acid.	1
10	CO1	Select the most reactive molecule for Electrophilic substitution reaction OH CI CI CI CI CI CI CI CI CI C	1
11	CO3	Select the cyclic fatty acid a) Chaulomoogric acid b) lactobacillic acid c) Both of the above d) None of the above	1

12	CO2	Name a method that can be used for synthesis of phenol.	1
13	CO2		
14	CO3	Sodium benzene sulphonate on heating gives	1
		Which alcohol is present in all natural fats and oils?	1
15	CO4	Naphthalene is a polynuclear angular hydrocarbon. True or False?	1
16	CO5	Singlet carbine is(more or less) stable than triplet carbine.	1
17	CO1	OH group reactivity of benzene ring	
18	CO4	The wavelength of UV light at which anthracene dimerizes is	1
19	CO1	Draw structure of an anti-aromatic compound.	
20	CO5	The normal tetrahedral angle is	1
		SECTION B	
		Long Answers (Answer any two out of 3) 2X10	_
Q2			20
1	CO5	 i) An aromatic compound has two OH groups and it can treat acne, psoriasis, and other skin disorders. Guess the structure and propose a suitable synthesis for the compound. ii) A compound that degrades and liberates nitrogen at high temperature so must be synthesized at low temperature. Guess and propose synthesis iii) Salicylic acid is used to treat warts, calluses, psoriasis. Can you propose a synthesis for the same. iv) Propose a separate synthesis for a reduced product of salicylic acid. 	10
2	CO2	Postulate Baeyer's strain theory, with its limitations. Explain briefly the two advanced theories that helped to overcome the limitation of Baeyer's strain theory. Draw suitable structures for proper explanation.	2.5X4
3	CO4	i) Which will be major product of the following reaction, A or B? Explain your answer with suitable reasoning and reactions. CH ₃ CH ₃ CI + Anhyd AlCl ₃ A B ii) How will you synthesize 1-alkynaphthalene from benzene.	5+5
		SECTION C	
		Short Answers (Answer 7 out of 9) 7X5	
02			1
Q3			35

1	CO2	Propose a synthetic scheme for the following interconversion i) Nitrobenzene to Phenol ii) Aniline to 2-ethylphenol	2.5 X 2
2	CO2	Rank the following compounds in increasing order of basic strength a) In Aqueous phase b) In gaseous phase	
		Propose suitable reason for your ranking.	3+2
		H_3C NH_2 H_3C $N-CH_3$ H_3C H_3C $N-CH_3$	
3	CO1	Bromination of Phenol can be accomplished at room temperature however benzene requires higher temperature and a suitable catalyst (FeBr3) for the same reaction. Explain.	5
4	CO4	Arrange in increasing order of acidic strength. Explain the reason. Toluene, Diphenylmethane and triphenylmethane	5
5	CO4	Complete the following reactions: $ \begin{array}{cccccccccccccccccccccccccccccccccc$	2.5+2.5
6	CO1	Select most acidic compound. Give suitable reasoning. OH OH CH ₃ CH ₃	1+4
7	CO5	How malonic ester reacts with 1,2-dibromopropane. Write suitable reaction.	
8	CO3	Calculate the acid value of an oil sample, 20grams dispersed in 100mL of ethanol. It requires 100mL of decimolar KOH solution for complete neutralization.	5
9	CO3	Explain the principle involved in determination of Reichert Meissl (RM) value and acetyl value.	5
		Total	75