

• **CHEMISTRY 342 PROBLEMS**

• **SUMMER Carey Version 9**

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- These assume you are using Carey and Giuliano version 9. (I have lists that are appropriate if you instead have the 8<sup>th</sup> or 10<sup>th</sup> edition of Carey, or the 6<sup>th</sup>, 7<sup>th</sup>, or 8<sup>th</sup> version of Wade. Contact me if that's your situation, or see:

Ch	Recommended Book Problems
	Test 1
4	Alcohol basics and halogenation: 5, 7, 11, 12, 24,a,c-h, 25b,f,i, 39a,d, 40a,c
14	Grignard reactions: 2, 3 (ignore K calc), 4, 20b, 21b, 22c, 23, 26, 28, 29a,b
19	Esters with Grignards or LiAlH <sub>4</sub> : 19: 14, 16
15	Lots of Alcohol reactions: 2, 3, 10, 16a-c,f, 17a-c, 20a-d, 21a,c, 22b,c, 23a-c, 24a-e, 25d-f,h, 26a-f, 28a,c
	Test 2
13	Spectroscopy: 5, 6, 7, 9, 11, 12, 16, 18, 30, 32a-c, 33a-d, 35, 37, 43, 45, 46
	Test 3
17	Aldehydes and Ketones: 1a,c, 2, 3, 5, 6, 10, 11a, 12, 14a-d, 16 23a, 26a,b,d,g-k,q,r, 27a,b,d,g-k,q,r, 28a,d, 29a,e, 31a-f, 33, 35, 36, 37a, 38a,b, 39a-d, 40, 44d,e, 48, 49
20	Enolate Chemistry: 1, 2, 6, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 22, 23, 29, 37c,e,f, 41a-c,e,f, 42a-g, 44, 45, 50, 51, 52, 57a,c,d Decarbox: Ch 18: 11 Wittig: Ch 17: 18, 19, 20, 44b,c
	Test 4
21	Amines: 1, 2, 3, 6, 13, 23a-c, 24a-g,i,j, 27a,b,d, 29a-c,e, 29, 34a,c,g, 36a-g,j, 37a-f, 38a, 39a-c, 42a
18	Acids: 3, 5a-c,f, 7, 8, 9, 10, 13a,b,e-j, 14a,c,d, 15, 16a,d, 17a-d,f, 19a,c,e,f, 20a,b,d,e, 21, 23a-c,e,f, 28, 30a, 34, 35, 37
19	Acid Derivatives: 1,c,d, 4, 5a,b, 6, 7, 8, 10, 11, 13, 19, 22, 27d-f, 28b,c, 29a-c,h,j,k,n,o,t, 32a-d, 33a-d,f,g

## Schedule: Which Lecture Videos and Practice-Set Videos Go with Each Test

Chemistry 360, Jasperse, Carey Version 9 Reading		Assignment
<b>TEST 1 LECTURES</b>		<b>Assume Cary 9</b>
1.	Intro; Structure, Nomenclature, Properties, Synthesis Review	4.3-6,
2.	Synthesis of Alcohols; Grignard Reactions	14.5, 19.11
3.	Synthesis of Alcohols; Grignard Reactions	14.5,7; 16.11
4.	Grignard Reactions; Reduction Reactions	14.7; 15.2,4
5.	Acidity of Alcohols, Oxidation of Alcohols	1.13,14; 15.9
6.	Halogenation of Alcohols	4.8-12
7.	Synthesis and Retrosynthesis	14.7
8.	Catchup, Multistep Synthesis Problems; Tosylates;	8.11
9.	Catchup, Multistep Synthesis Problems	Catchup
10.	Skip: 14.6,8-14; 15.8,11-13	
11.	<b>Extra Practice Sets+Videos:</b> Mechanisms Basics Review; Retrosynthesis; Acid-Base Practice; Alcohol Synthesis and Reactions Mechanisms	
***	<b>Test #1 Covering Chapters 14-15.</b>	<b>Test 1</b>
<b>TEST 2 LECTURES</b>		
	NMR Intro: Chemical Shift, Integration, and Splitting; NMR Problem Solving 1H NMR Problem Solving	13.1-6,25 13.4-12
11.	1H NMR Problem Solving	13.4-12
12.	13C NMR	13.14-19
13.	Infrared Spectroscopy	13.21-23
14.	Integrated Practice Problems	Practice
15.	Skip: 13.23	
16.	<b>Extra Practice Sets+Videos:</b> Familiar Recognizable Groups in H-NMR; Jasperse NMR Practice Problems (>40 pages)	
17.		
	<b>Test #2 Covering Chapter 13.</b>	<b>Test 2</b>
<b>TEST 3 LECTURES</b>		
18.	Ketones/Aldehydes. Nomenclature, Properties, Intro, Synthesis	17.1-4
19.	Synthesis and Reactions of Ketones/Aldehydes.	17.5-6
20.	Reactions of Ketones/Aldehydes	17.7
21.	catchup	17.8,9
	Reactions of Ketones/Aldehydes	17.10, 14
	Enolates Intro. Acid/Base Considerations; Proton as Electrophile	20.1-2
	Halogenation; Alkylation; Ester Hydrolysis; Decarboxylation	20.6-7
	The Aldol Reaction (Aldehyde/Ketone as Electrophile)	20.3,4
22.	Claisen Reaction (Ester as Electrophile);	20.5
23.	The Wittig Reaction; Catchup.	17.12
24.	Catchup, Integrated Practice Problems.	Catchup
25.	Skip: 17.11,13; 20.8	
26.	<b>Extra Practice Sets+Videos:</b> Mechanism Practice; Retrosynthesis + Synthesis Design Practice	
27.		
	<b>Test #3 Covering Chapters 17 and 10.</b>	<b>Test 3</b>
<b>TEST 4 LECTURES</b>		
	Amines, Nomenclature, Properties, Basicity	21.1-4
	Amines, Basicity	21.5-7
	Reactions and Synthesis of Amines	21.9-12,17
28.	Carboxylic Acid Nomenclature and Acidity	18.1-7
29.	Synthesis and Reactions of Acids	18.10-18
30.	Interconversions Among Acids and Derivatives	19.1-10
31.	Interconversions Among Acids and Derivatives, Catchup	19.11-19
32.	Practice Problems, Catchup	-
33.		
34.	<b>Extra Practice Sets+Videos:</b> Acid-Base Practice (Easy); Acid-Base Practice (Less Easy); Mechanisms, Retrosynthesis + Synthesis Design	
***	<b>Test #4 Chapters 21, 18, 19</b>	<b>Test 4</b>
<b>TEST 1 LECTURES</b>		<b>Assume Cary 9</b>
	Intro; Structure, Nomenclature, Properties, Synthesis Review	4.3-6,