

• **CHEMISTRY 360 PROBLEMS**

• **SUMMER Carey Version 10**

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• These assume you are using Carey and Giuliano version 10. (I have lists that are appropriate if you instead have the 8th or 9th edition of Carey, or the 6th, 7th, or 8th or 9th version of Wade.

Contact me if that's your situation, or see:

- <https://www.ndsu.edu/pubweb/~jasperse/Chem342/Other%20Books-Problems%20and%20Readings%20342/Other%20Books-Problems%20and%20Readings.htm>

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

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

Chemistry 360, Jasperse, Summer (34 class lectures) Carey Version 10		Reading Assignment
Lec	Topic	
TEST 1 LECTURES		
1.	Intro; Structure, Nomenclature, Properties, Synthesis Review	Assume Cary 10 5.3-6,
2.	Synthesis of Alcohols; Grignard Reactions	15.5, 20.11
3.	Synthesis of Alcohols; Grignard Reactions	15.5,7; 17.11
4.	Grignard Reactions; Reduction Reactions	15.7; 16.2,4; 20.11
5.	Acidity of Alcohols, Oxidation of Alcohols	1.12,13; 16.7,9
6.	Halogenation of Alcohols	5.7-14
7.	Synthesis and Retrosynthesis	15.7
8.	Catchup, Multistep Synthesis Problems; Tosylates;	5.11; 6.10
9.	Catchup, Multistep Synthesis Problems	Catchup
	Skip: 14.6,8-14; 15.8,11-13	
	Extra Practice Sets+Videos: Mechanisms Basics Review; Retrosynthesis; Acid-Base Practice; Alcohol Synthesis and Reactions Mechanisms	
***	Test #1 Covering Chapters 15-16, with parts of 4 and others mixed in.	Test 1
TEST 2 LECTURES		
10.	NMR Intro: Chemical Shift, Integration, and Splitting; NMR Problem Solving	14.1-6,25
11.	¹ H NMR Problem Solving	14.4-12
12.	¹ H NMR Problem Solving	14.4-12
13.	¹³ C NMR	14.14-19
14.	Infrared Spectroscopy	14.21-23
15.	Integrated Practice Problems	Practice
	Skip: 14.23	
	Extra Practice Sets+Videos: Familiar Recognizable Groups in H-NMR; Jasperse NMR Practice Problems (>40 pages)	
***	Test #2 Covering Chapter 14.	Test 2
TEST 3 LECTURES		
16.	Ketones/Aldehydes. Nomenclature, Properties, Intro, Synthesis	18.1-4
17.	Synthesis and Reactions of Ketones/Aldehydes.	18.5-6
18.	Reactions of Ketones/Aldehydes	18.7
19.	catchup	18.8,9
20.	Reactions of Ketones/Aldehydes	18.10, 14
21.	Enolates Intro. Acid/Base Considerations; Proton as Electrophile	21.1-2
22.	Halogenation; Alkylation; Ester Hydrolysis; Decarboxylation	21.6-7
23.	The Aldol Reaction (Aldehyde/Ketone as Electrophile)	21.3,4
24.	Claisen Reaction (Ester as Electrophile);	21.5
25.	The Wittig Reaction; Catchup.	18.12
26.	Catchup, Integrated Practice Problems.	Catchup
	Skip: 18.11,13; 21.8	
	Extra Practice Sets+Videos: Mechanism Practice; Retrosynthesis + Synthesis Design Practice	
***	Test #3 Covering Chapters 18 and 21.	Test 3
TEST 4 LECTURES		
27.	Amines, Nomenclature, Properties, Basicity	22.1-4
28.	Amines, Basicity	22.5-7
29.	Reactions and Synthesis of Amines	22.9-12,17
30.	Carboxylic Acid Nomenclature and Acidity	19.1-7
31.	Synthesis and Reactions of Acids	19.10-18
32.	Interconversions Among Acids and Derivatives	20.1-10
33.	Interconversions Among Acids and Derivatives, Catchup	20.11-19
34.	Practice Problems, Catchup	-
	Extra Practice Sets+Videos: Acid-Base Practice (Easy); Acid-Base Practice (Less Easy); Mechanisms, Retrosynthesis + Synthesis Design	
***	Test #4 Chapters 22, 19, 20	Test 4