

CHEMISTRY 360 PROBLEMS

(The problems listed assume Wade 6th edition. Contact me if you have a different edition of Wade or have a version of Carey or McMurry as have been used at NDSU.)

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Ch	In Chapter Problems	End of Chapter Problems
10	1, 5d, 6, 8, 10, 12a,b,d, 13-16, 17 (esters only), 18-20, 22-26	31, 33a-d, 34b,c, 35a,c, 36b,c, 37 (review from chapter 8), 38a-l, 39, 40, 42, 43
11	1a,b,d, 2, 3, 5 (skip KMnO ₄), 6, 9, 10, 11, 12a, 13, 14, 22, 23, 27a,b, 33, 34, 35, 36, 37, 38	40 (do the bromides only), 41 (skip g), 42, 43, 44, 48a, b, c, f, g, h, 49, 50, 52, 53, 56
13	2, 3, 4, 5, 6, 7, 9, 11, 13a, 15, 16, 18, 22, 24a-e, 25, 27, 29, 30, 32	33, 34, 35 (skip d), 36, 38, 39, 40, 41, 43, 44, 49
12	4, 5	16
18	1a,b, 6, 7, 8, 9, 10, 11a,b, 12, 16, 17, 18a, 19, 21, 22, 24, 25, 26, 27a,b,d, 28, 29, 30, 31, 32, 33, 34a-d, 35a-c, 37a-c	39a-c, e-g, l, 40, 43, 44, 49, 50, 51a-f,h, 52, 56a-g, i-l, 57, 58,59, 61a-e, 64a-d, 65, 66
22	(Enols, Halogenation) 1, 2, 3, 4, 5, 6, 8a,c,d, 9b,d,e, (LDA alkylation) 13, (Aldol) 18, 19, 22, 23, 24, 25, 26, 27, 28, 29, 30,32, (Claisen) 34a, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, (alkylation-decarboxylation) 46, 47, 49, 50, (Michael) 55, 56, 57, 59	61, 62, 63, 64, 65, 66, 67, 68 (skip e), 69a, d, e, 70, 71, 73a-c
19	1,2(skip b,d), 3a-c, 5b,c, 6a-c, 15, 16, 17, 25b,d,f,g, 26, 27, 28, 30a-c, e-g, 31	36a-e, 37, 39a,c,d, 41a,b,h,i, j,l,m, 42 (skip e), 44a,d,g, 47, 48, 50a-c, 51a,c
20	1b-d,g, 2a-c, 3, 4, 5, 6, 11 b,c,d,f, 12, 13, 15b,c, 16a,b, 18, 19, 20, 21, 23, 24	26 (not d,g, i), 28a,e,f,h,i, 29 (skip b), 30a,d,e, 31, 32a,c,d, 33, 35a-e,i,j,k, 36a-c,e,f, 37, 38, 39, 41, 42, 43, 47, 48, 49, 50
21	1a-c, 6-14,16, 18, 31, 32a,b	44a,c,d,e,f, 45, 46, 47a,e,f, 48a,b, 49a,b,d, e, 50a,b,c,e,f,g,h, j, l, 51, 54a,c,d,f,j, 55, 57a-c

Chemistry 360, Jasperse, Spring 2012 (43 class days)			Reading Assignment
Date	Topic		
1	9-Jan	Intro; Structure, Nomenclature, Properties, Weak Acidity of Alcohols	10.1-10.6
2	11-Jan	Synthesis of Alcohols; Organometallic Reactions.	10.7-10.9
3	13-Jan	Synthesis of Alcohols; Organometallic Reactions.	10.7-10.9
		Skip 10.12	
	16-Jan	No Class. Martin Luther King Day.	no class
4	18-Jan	Side Reactions; Reduction of Carbonyl Compounds	10.10-10.11
5	20-Jan	Oxidation of Alcohols	11.1-11.3
		Skip 11.4, 11.11-13	
6	23-Jan	Conversion of Alcohols to Tosylates or Halides; Uses of Tosylates and Halides	11.5-11.9
7	25-Jan	Miscellaneous; Chemical Tests; Multistep Synthesis	11.10, 11.14
8	27-Jan	Retrosynthetic Analysis	
9	30-Jan	Catchup, Multistep Synthesis Problems	Catchup
10	1-Feb	Review for Test 4	---
11	3-Feb	¹ H NMR Overview: Chemical Shift, Integration, and Splitting; ¹ H NMR Problem Solving	13.5-8
12	6-Feb	¹ H NMR Overview: Chemical Shift, Integration, and Splitting; ¹ H NMR Problem Solving	13.5-8
13	8-Feb	Test #1 Covering Chapters 10-11.	Test 1
14	10-Feb	¹ H NMR Problem Solving	13.5-8
15	13-Feb	More Problem Solving; Complex Splitting; Stereochemical Nonequivalence of Protons	13.9-10
16	15-Feb	¹³ C NMR; Infrared Spectroscopy	13.12-13; 12.11-12
17	17-Feb	Spectroscopy Catchup, Integrated Problems	catchup
		(Focus on 13.5-8, 12-13; Skim 13.1-4, 9, 10; Skip 11, 14)	
18	20-Feb	Ketones/Aldehydes. Nomenclature, Properties, Intro.	18.1-7
19	22-Feb	Test #2 Covering Chapters 12-13. 50 points.	Test 2
20	24-Feb	Synthesis of Ketones/Aldehydes.	18.7-11
21	27-Feb	Reactions of Ketones/Aldehydes	18.12, 14-17, 18-19
22	29-Feb	Reactions of Ketones/Aldehydes	18.20-21
23	2-Mar	Catchup; Enols and Enolates Intro. Acid/Base Considerations; Proton as Electrophile	22.1-2, 22.15
		(Skip 18.13, for now....)	
24	5-Mar	Enols and Enolates Intro. Acid/Base Considerations; Proton as Electrophile	22.1-2, 22.15
25	7-Mar	Halogenation; Alkylation; Double Activation; Ester Hydrolysis; Decarboxylation	22.3, 5, 15-17
26	9-Mar	The Aldol Reaction (Aldehyde/Ketone as Electrophile)	22.7-11
	12-Mar	Spring Break	
	14-Mar	Spring Break	
	16-Mar	Spring Break	
		(Skip 22.4,6. 18, 19)	
27	19-Mar	Claisen Reaction (Ester as Electrophile)	22.12-17
28	21-Mar	Catchup	
29	23-Mar	The Wittig Reaction and Alkene Synthesis; Catchup	18.13
30	26-Mar	Catchup, Integrated Practice Problems.	Catchup
31	28-Mar	Amines. Intro, Nomenclature, Properties; Basicity of Amines; Structural Factors; Salts	19.1-7
32	30-Mar	Test #3 Covering Chapters 18 and 22.	
33	2-Apr	Reactions of Amines	19.10-13, 17-18
34	4-Apr	Diazonium Chemistry; Amine Synthesis by Reductive Amination of Carbonyls	19.17-19
	6-Apr	No Class, Easter Friday	
		(Skip 19.8-9,14-16,24-25)	
	9-Apr	No Class, Easter Monday	
35	11-Apr	More Synthesis of Amines	19.19
36	13-Apr	Carboxylic Acids: Nomenclature; Properties; *ACIDITY*; Salts; Soap; SYNTHESIS	20.1-5
37	16-Apr	Acid Synthesis; Reactions	20.8-11
38	18-Apr	Reactions of Acids: Nucleophilic Acyl Substitution; Carboxylic Acid Derivatives	20.13-15; 21.1-3
39	20-Apr	Interconversions Among Acids and Derivatives; Synthesis and Mechanism; Catchup (Skip 20.6,7,12)	21.5-7
40	23-Apr	Interconversions Among Acids and Derivatives; Synthesis and Mechanism; Catchup	21.5-7
41	25-Apr	Practice Problems	-
42	27-Apr	Test #4 Chapters 19-21	Test 4
		(Skip 21.4)	
43	30-Apr	Significant Special Topics; Preview of ACS Final Exam; Course Evaluations	Practice
	7-May	Final Exam, 12 noon., Monday	Final Exam