

ORGANIC CHEMISTRY II PROBLEMS, USING WADE 9

Based on Organic Chemistry (9th Edition) by L. G. Wade Jr

Note: if you have the 8th, 7th or 6th edition of Wade, or if you have a Klein textbook as used at NDSU, lists of problems are linked from the following website, or you can email me (jasperse@mnstate.edu) to get the list.) Contact me if that's your situation, or see the following link:

- <https://web.mnstate.edu/jasperse/Chem360/OtherTexbooks.htm>

Note: for some links to buy variably new or perhaps older edition of the textbook and the associated solutions manuals, see: <https://web.mnstate.edu/jasperse/Required-Text-and-Materials.pdf>

<u>Chapter Topic</u>	<u>Wade Chap</u>	<u>Wade 9 Problems In the Chapter</u>	<u>Wade 9 Problems Back of the Chapter</u>
Structure and Synthesis of Alcohols	10	1, 5d, 6, 8, 10, 12a,b,d, 13-16, 17 (esters only), 18-20, 22-26	30, 32a-d, 33b,c, 34a,c, 33b,c, 36a-1, 38 (review from alkenes), 39, 40, 42, 43, 56, 57 (skip d)
Reactions of Alcohols	11	1a,b,d, 2, 3, 4.1,2, 5a,b, 6, 9, 10, 11, 12a, 13, 14, 22, 23, 26a, 33, 34, 35, 36, 37, 38	39 (skip g), 41 (do the bromides only), 42, 43, 44, 48a, b, c, f, g, h, 49, 50, 52, 53, 56
Nuclear Magnetic Resonance Spectroscopy	13	2, 3, 4, 5, 6, 7, 8, 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
Infrared Spectroscopy	12	4, 5	16
Ketones and Aldehydes	18	1a,b, 6, 7, 8, 9, 11, 13a, 14, 16a, 17, 19, 20, 21, 22a,b,d, 23, 24, 25, 26, 27, 28, 29a-d, 34a-c, 36a	38a-c, e-g, 1, 39a,c, 40, 41, 43, 44, 47a,c,d, 49, 50a,b,d,e, 51a-f,h, 52, 53a-g, i-l, 54a-e, 55a,c,d,e,f 57, 58, 59, 64a-d, 65, 67a,b
Alpha Substitutions and Condensations of Enols and Enolate	22	(Enols, Halogenation) 1, 2, 3, 5, 10, 11, 12, 13, 14, (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, Ch 18.32, 33 (Wittig)	60, 61, 62, 63, 64, 65, 67 (Basically draw the dicarbonyl precursor), 68, 69 (skip b,e,i), 71a, d, e, 72, 73, 77a-c
Amines	19	1,2(skip b,d), 3a-c, 5b,c, 6a-c, 15, 16, 17, 26, 27, 28, 30a-c, e-g, 31	32a-e, 33, 34, 37a,c,d 38a, h,i, j,l,m (NaBH(OAc) ₃ = NaBH ₃ CN), p, q, 40f, 42a,d,g, 47
Carboxylic Acids	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	25 (not d,g, i), 26a,b,c,f,g, (IUPAC only), 27a,e,f,h,i, 28, 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, 44, 47
Carboxylic Acid Derivatives	21	1a-c, 6-14,16, 18, 31, 32a,b	42a-c, 43a,c,d,e,f, 44, 45a,e,f, 46, 47 (saponification is NaOH/H ₂ O hydrolysis), 48a,b, 49a,b,d, e, 50a,b,c,e,f,g,h, j, l, 54a,c,d,f,j, 55, 57a-c