

Time: 50 minutes

Chemistry 212
Quiz III

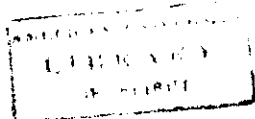
Dec. 16, 1999

Family Name: Chahine

First Name: Lama

Student Number: 9706564 Section: 1

Question	I	<u>16</u>	out of	16
	II	<u>25</u>	out of	30
	III	<u>20</u>	out of	21
	IV	<u>12</u>	out of	18
	V	<u>15</u>	out of	15



Total 88 out of 100%

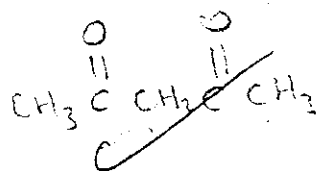


Good Luck

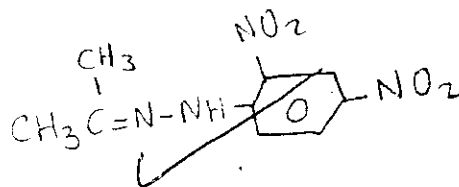
16

I (16%) Give the structure of each of the following compounds:

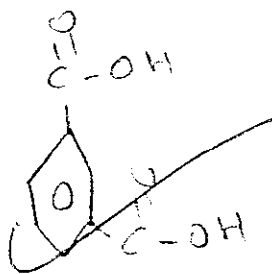
a) Acetylacetone



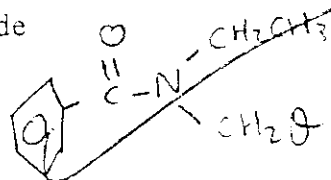
b) The 2,4-dinitro-phenylhydrazone of acetone



c) Isophthalic acid

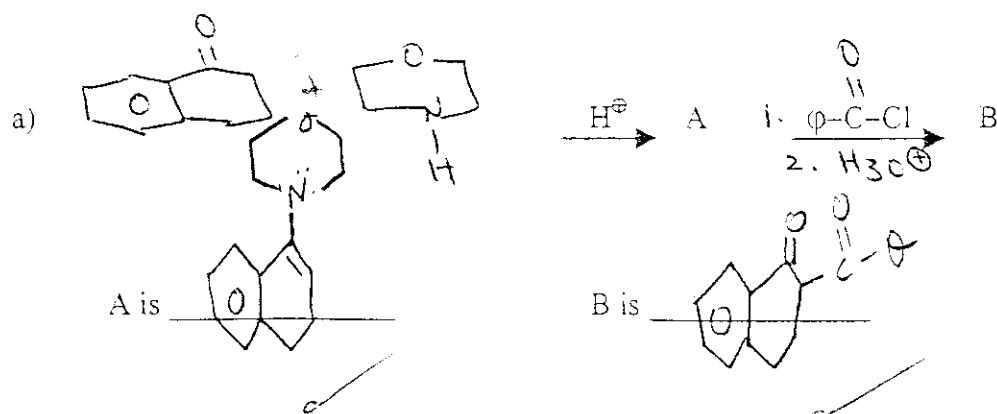


d) N-Benzyl-N-Ethylbenzamide

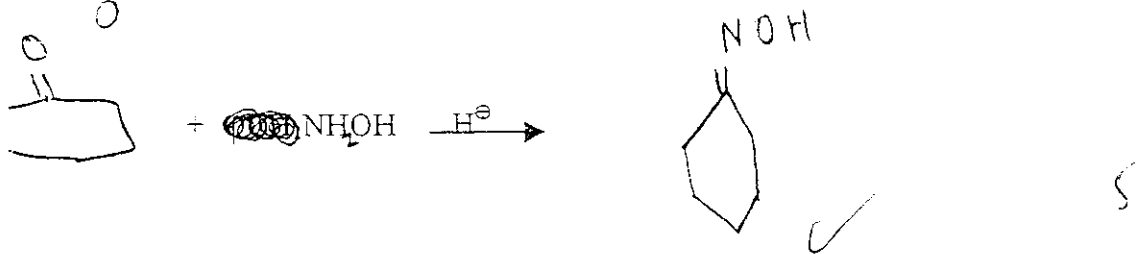
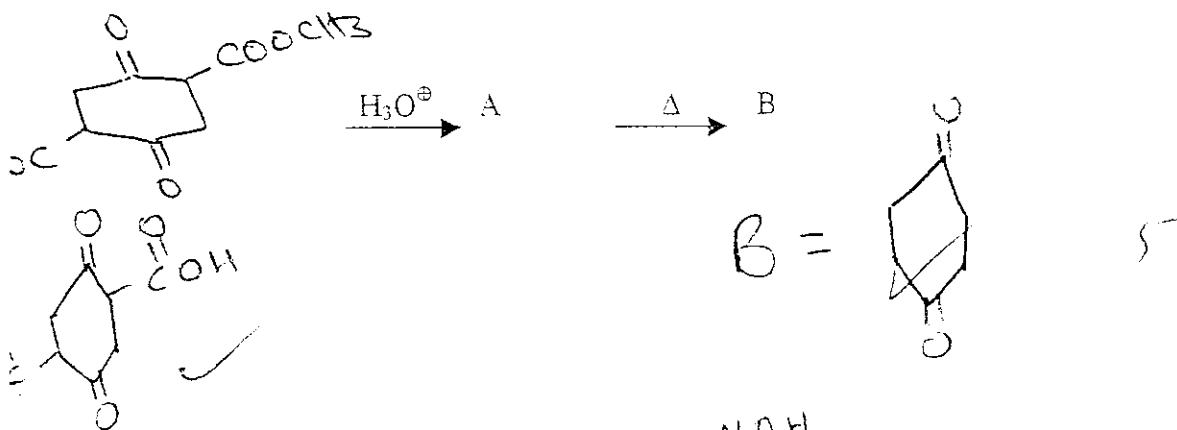
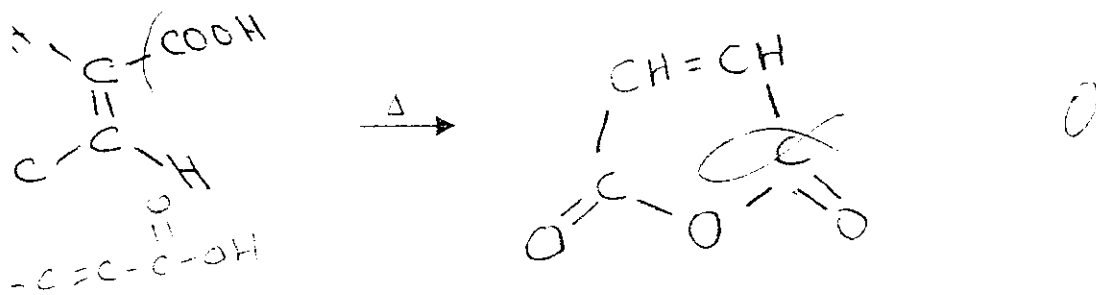
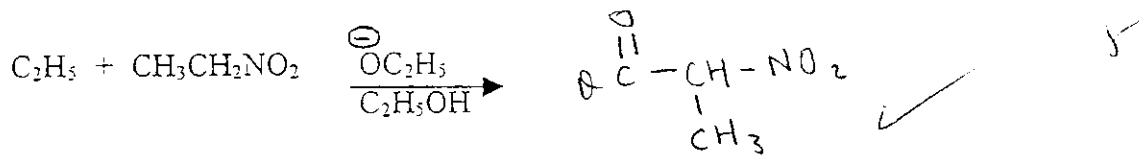
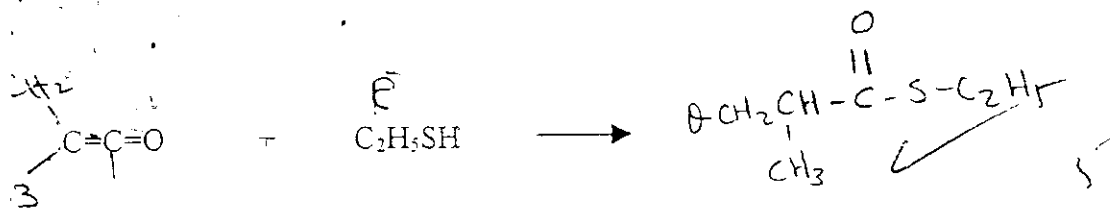


25

II (30%) Complete each of the following specifying the major product where possible. If no reaction takes place write "No Reaction".



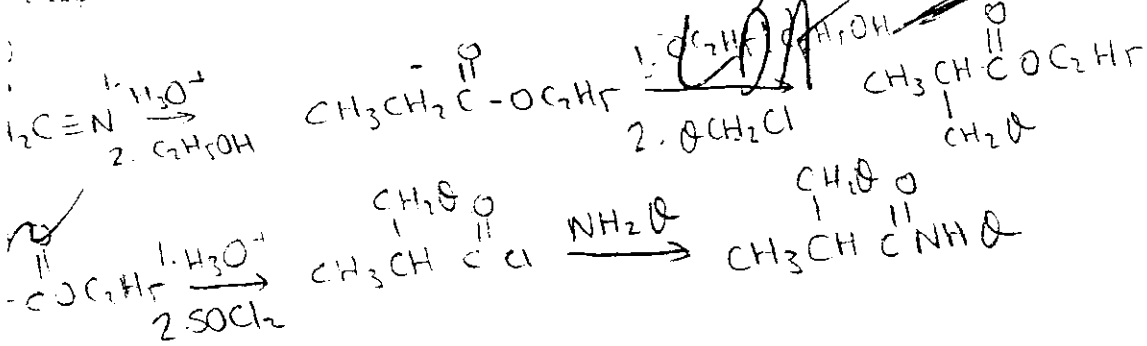
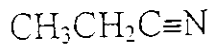
5



Synthesize each of the following compounds from the indicated starting material using any organic and/or inorganic reagents needed.

-NH_2

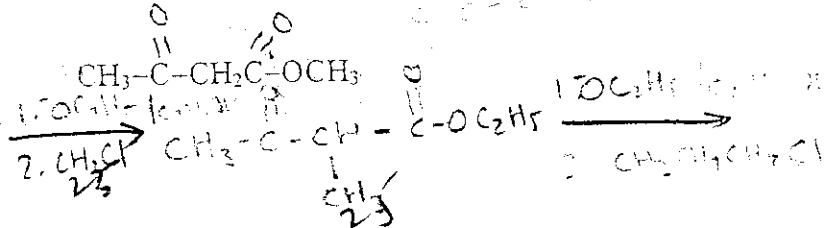
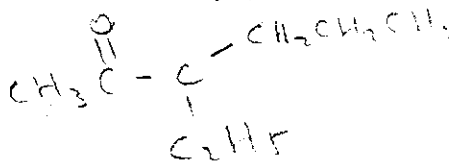
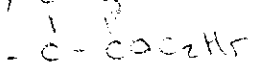
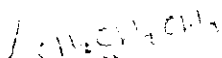
from



2-hexanone

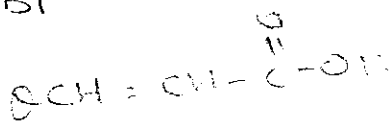
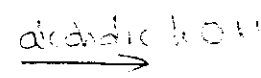
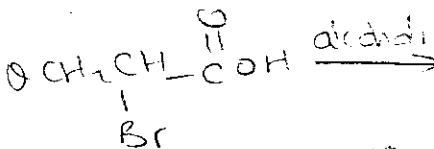
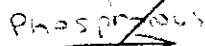
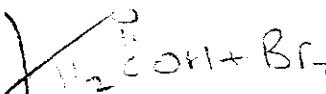
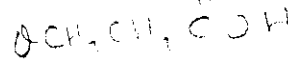
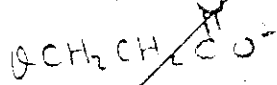
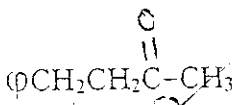
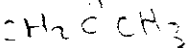
from

OH
SS

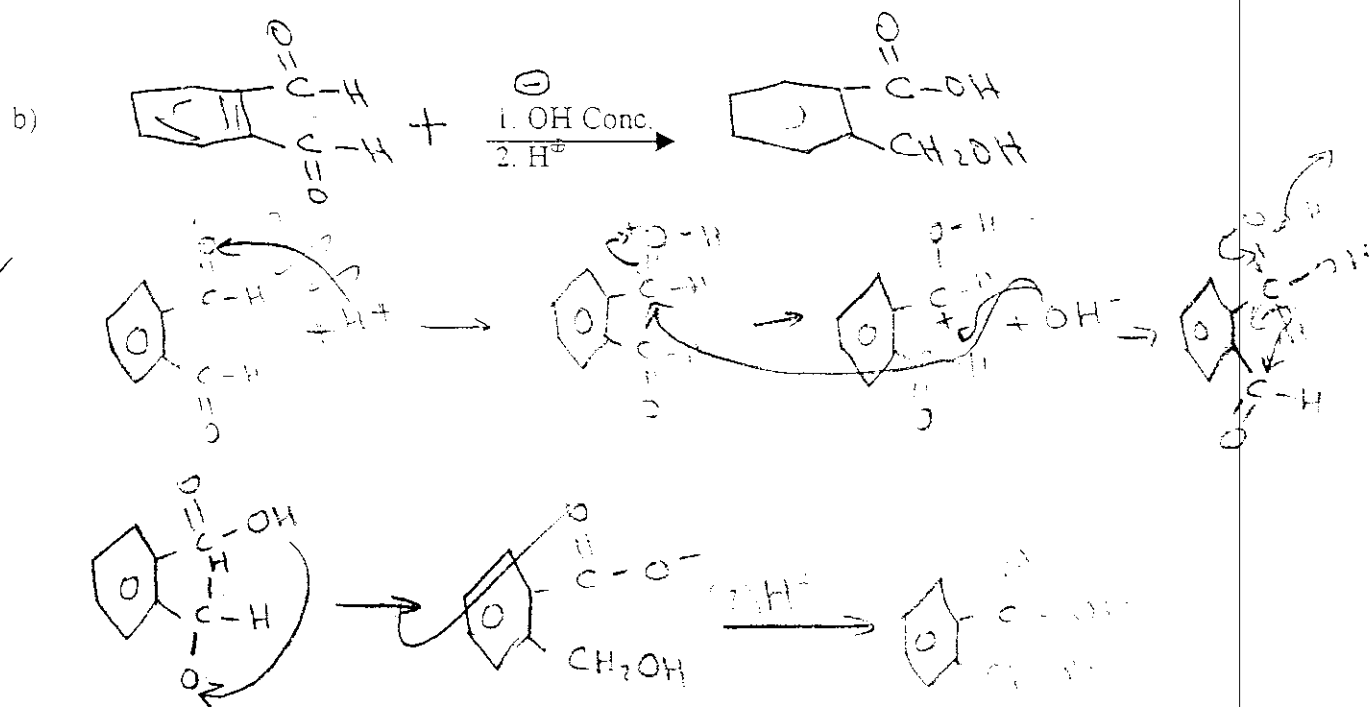
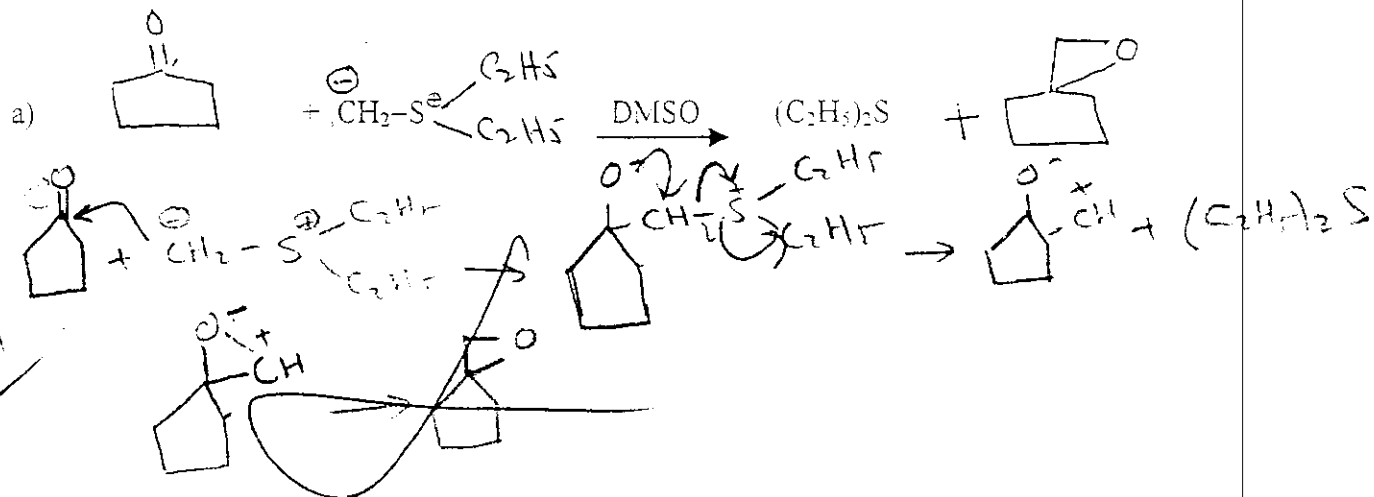


H-COOH

from



IV (18%) Give a detailed mechanism for each of the following transformations.

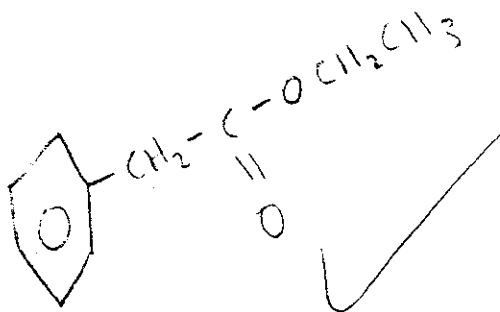


15

V (15%)

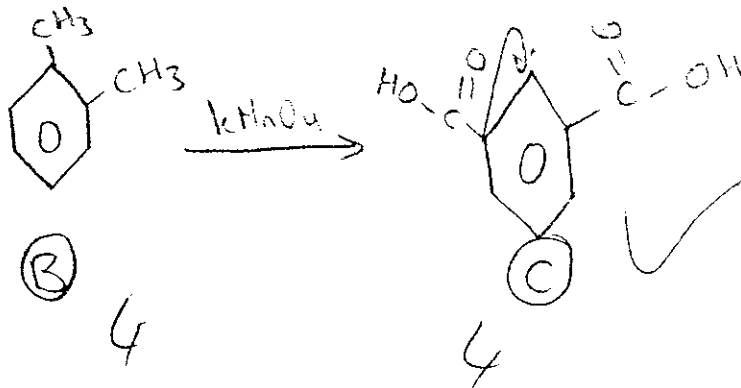
a) Give the structure of compound A, $C_{10}H_{12}O_2$ that exhibits the following nmr data:

- Triplet δ 1.2 (3H)
- Singlet δ 3.5 (2H)
- Quartet δ 4.1 (2H)
- Singlet δ 7.1 (5H) ✓



7

b) Compound B, C_8H_{10} shows two nmr singlets at δ (7.2) (4H) and δ 1.2 (6H). Upon oxidation with alkaline $KMnO_4$ followed by acidification produces compound C with Neutralization equivalent 83 ± 1 . Give the structures of B and C.



10
16
150
166