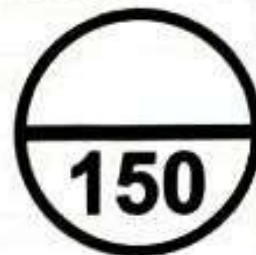


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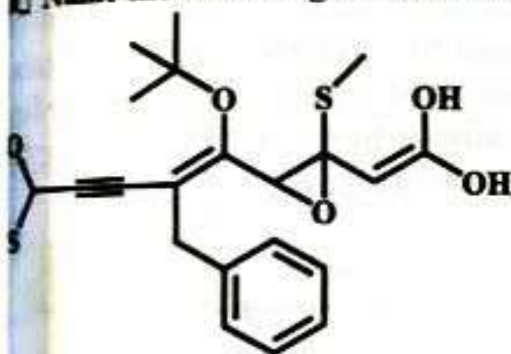
May, 21st 2017
Allotted time:- 2 hr.

Final Exam
Organic Chem. (1)
2016/2017



Student's Name Student's No

Q Name the following structure according to IUPAC system of nomenclature; (12 pts.)

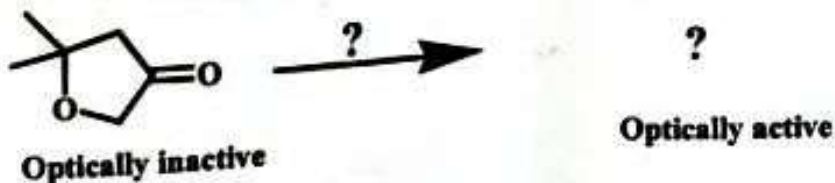


Organic chemistry I
dr kanan
final 2017

Q Answer the following;
Exemplify for Anomers! (5 pts.)

Exemplify for diastereomers! (5 pts.)

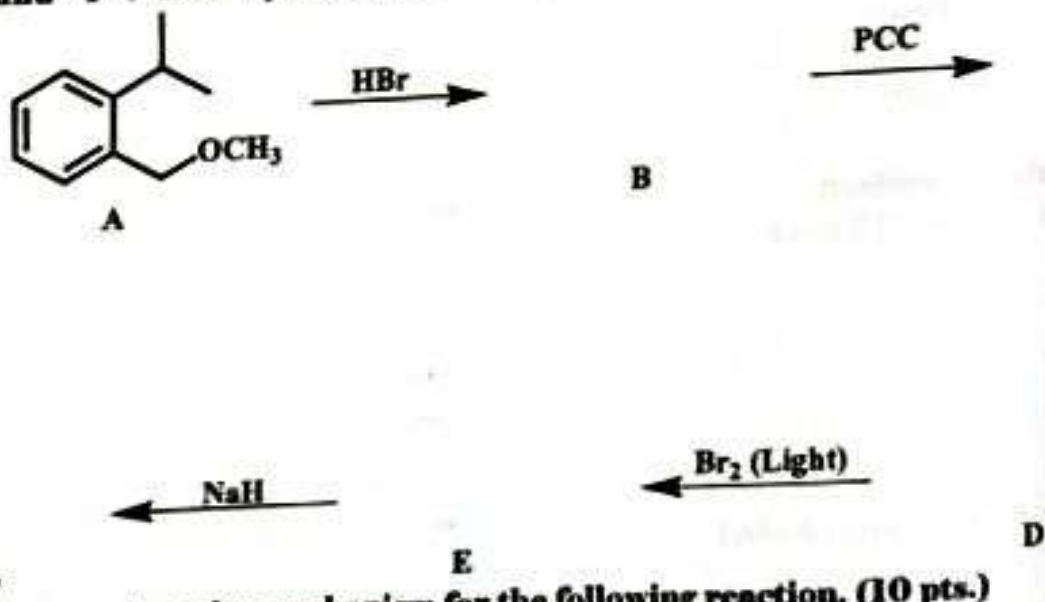
Q Complete and discuss the following reaction from optical activity point of view; (6 pts.)



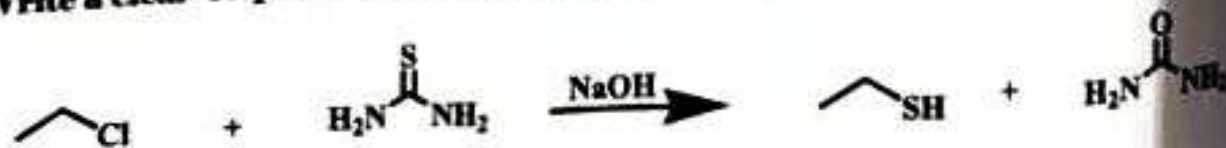
Q3] Fill in the following table; (8 pts.)

Comparison elements	<u>S_N1</u>	<u>E2</u>
Alkyl halide		
Rate of the reaction		
Intermediate		
Stereochemistry of the product		

Q4] The given compound "A" was treated with HBr affording the compound "B", then was oxidized with PCC affording the compound "C" which was reduced with NaBH₄ to afford compound "D". D then was brominated using Br₂(light) affording the compound "E" that was deprotonated using a strong base "NaH" affording compound "F". Identify the structures B, C, D, E and F? (10 pts.)

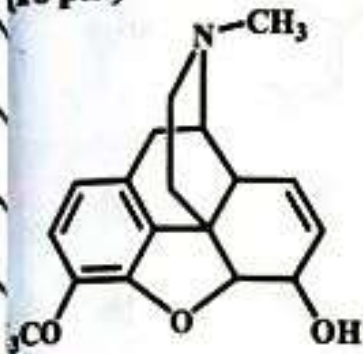


Q5] Write a clear step-wise mechanism for the following reaction. (10 pts.)



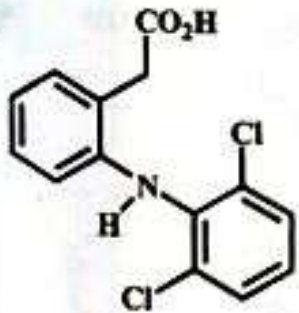


Regarding the below structures;
(10 pts.)



- How many stereo-isomers are available?
- What is the effect of its treating with ozone?
- It is a fat-soluble? How to make it water-soluble?
- How many allylic and benzylic carbons are there?
- What is the effect of its treating with butadiene?

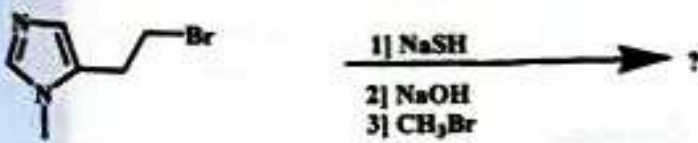
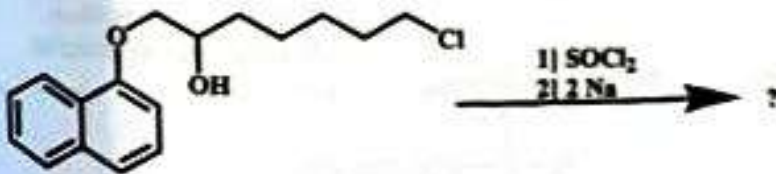
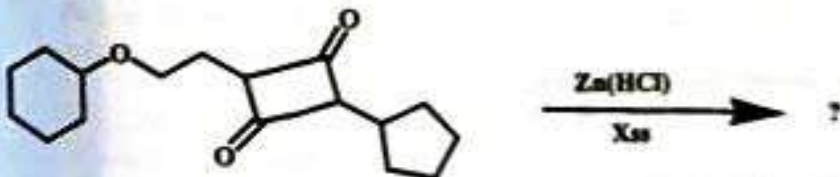
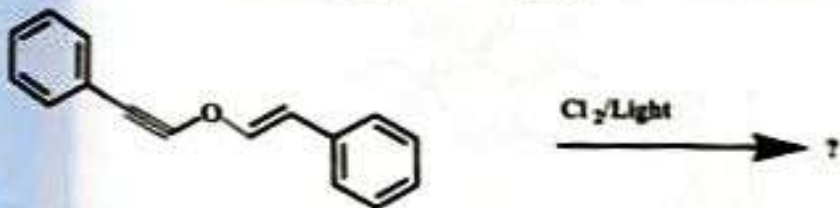
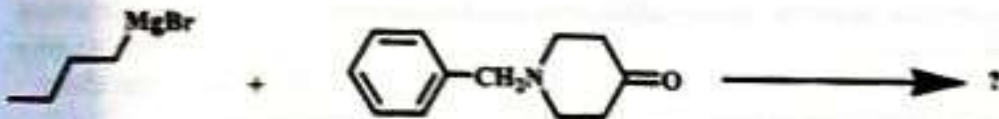
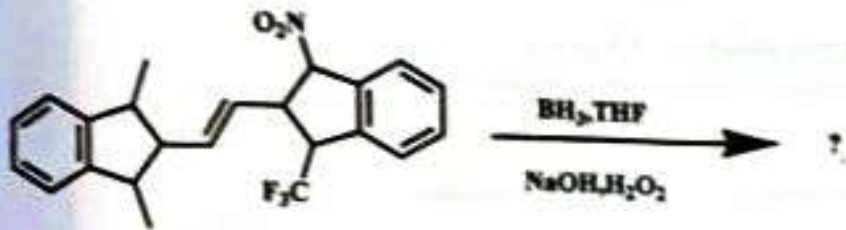
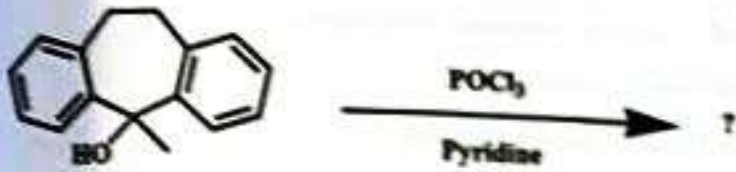
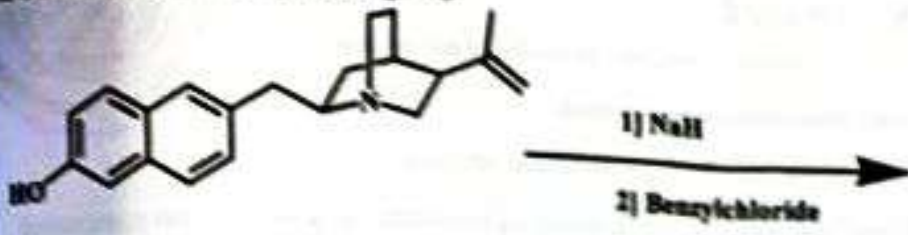
(10 pts.)



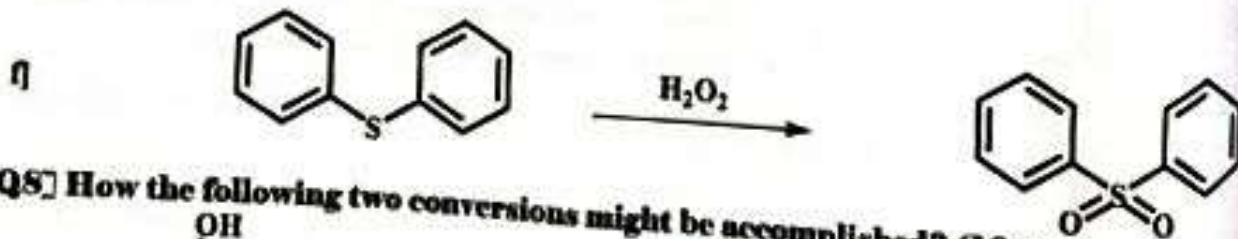
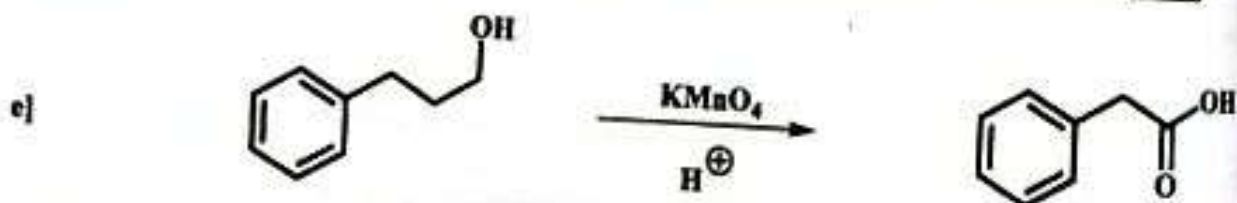
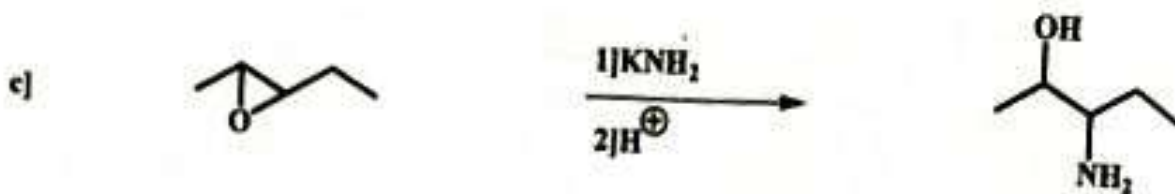
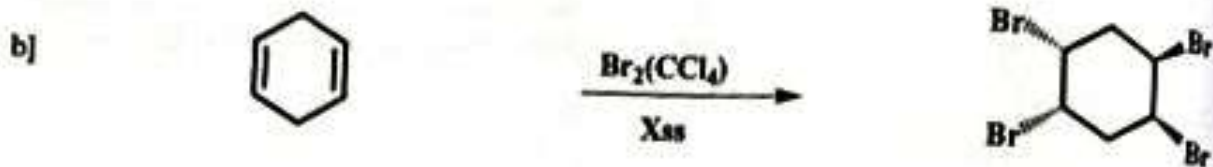
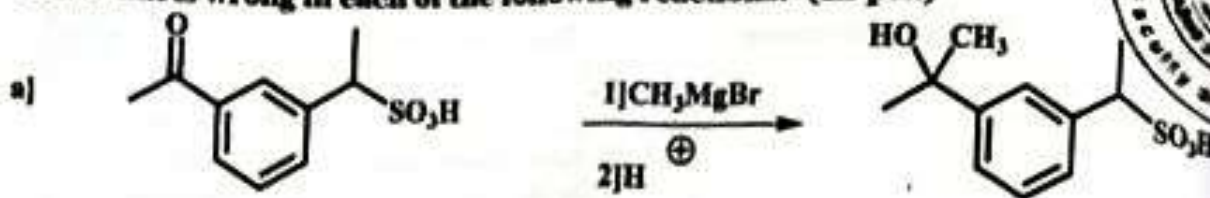
- It is classified as acidic drug? Why
- Draw its potassium salt.
- It is optically inactive drug? Why
- Treating with Mg/ ether then hydrolyzed to give what.?
- Explain the intramolecular neutralization.



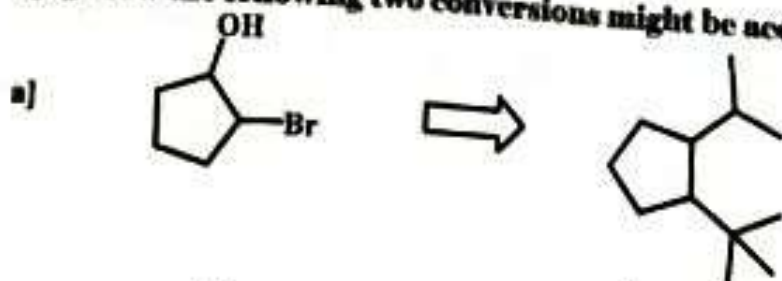
Provide the missing: (16 pts.)



Q7] What is wrong in each of the following reactions? (12 pts.)



Q8] How the following two conversions might be accomplished? (16 pts.)



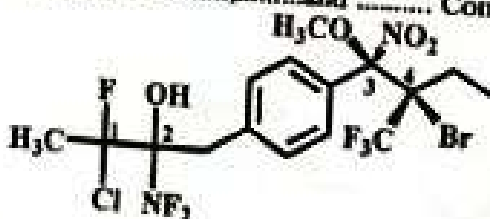


Q10] True or False (✓ Or X) (10 pts.)

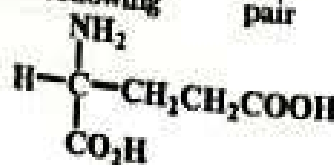
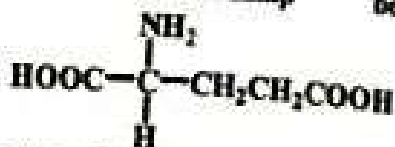
- a- | | Halogenation of allylic or benzylic system is easier than ethane.
- b- | | Amines are more basic than nitro compounds.
- c- | | Protonated aniline is more acidic than protonated phenol.
- d- | | A compound with 2 achiral centers and a plane of symmetry is known meso compound.
- e- | | Sulfoxide is an advanced state of oxidation compared with sulfide.
- f- | | Dehydration of hexanol is easier than of nitrohexanol.
- g- | | The main function of epoxide is Phase Transfer Catalyst.
- h- | | S_N2 product is accompanied with optical inactivity feature.

Q11] MCQ'S :- Choose the correct answer (14 pts.)

1. The acidic hydrolysis of epoxides leads to the formation of
 - a) anti-diol
 - b) alcohol
 - c) epoxyalcohol
 - d) syn-diol
2. Cycloaddition reaction is related to reaction
 - a) Grignard
 - b) Williamson
 - c) Wurtz
 - d) Diels-Alder
3. Grignard reagent has the ability to reduce aldehydes and ketones via reaction
 - a) nucleophilic addition
 - b) nucleophilic substitution
 - c) electrophilic addition
 - d) None of the above
4. The following has 3 chiral centers with and Configurations



5. Dhydrohalogenation or dehydration can be done via
 - a) E1 or E2
 - b) E1 and S_Ni
 - c) E1, 2R, 3S and 4S
 - d) none of the above
6. The conformation of alkane arises from
 - a) pi bond rotation
 - b) angle strain
 - c) S_N1 or S_Ni
 - d) all of the above
7. The relationship between the following pair is
 - a) enantiomers
 - b) identical
 - c) sigma bond rotation
 - d) 1,3-diaxial interaction



Best wishes
Dr. Karim Mahmoud M. H. Abdellatif

[Signature]
17.5.2017

