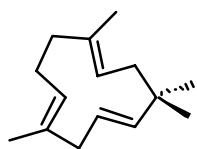
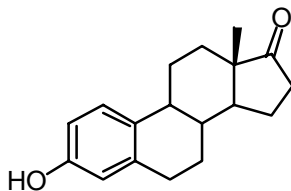


Problem Set 5

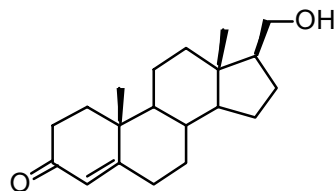
1. Assign the following molecules to the given categories. For steroids specify subgroup.



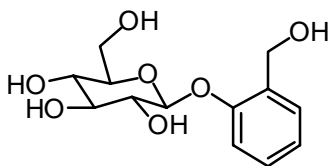
humulene



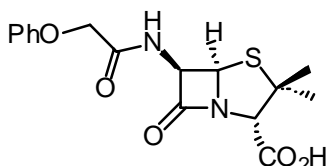
estrone



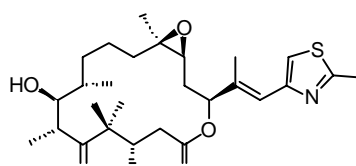
homotestosterone



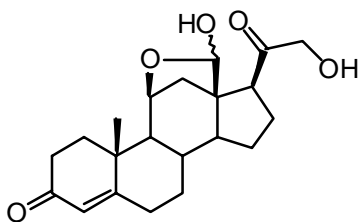
salicilin



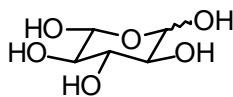
penicillin



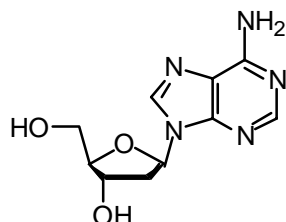
epothilone B



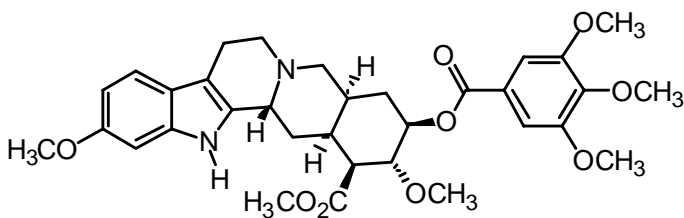
aldosterone



L-fucose



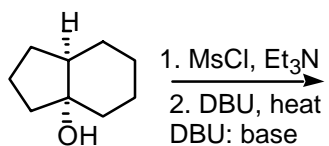
deoxyadenosine



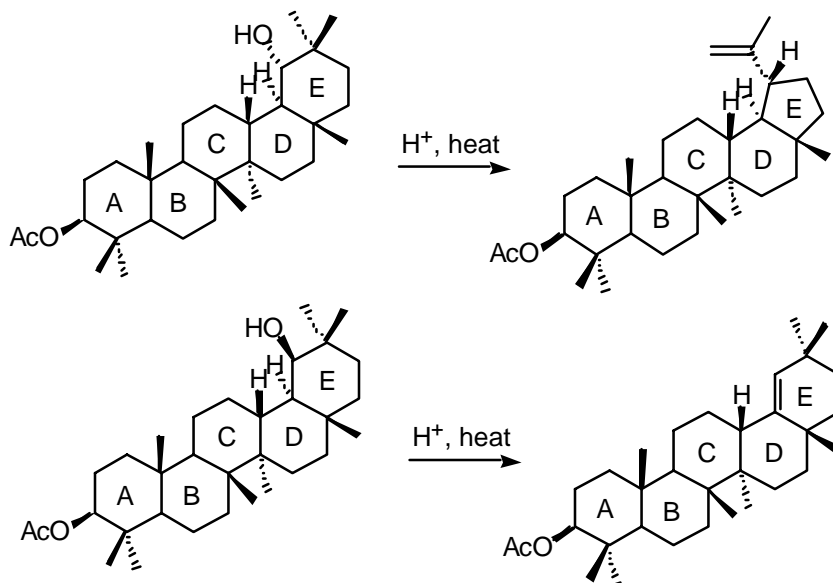
reserpine

Substance categories: STEROIDS (Glucocorticoids, mineralocorticoids, estrogens, androgens); TERPENES; CARBOHYDRATES; β -LACTAM ANTIBIOTICS; ALKALOIDS; NUCLEOSIDES.

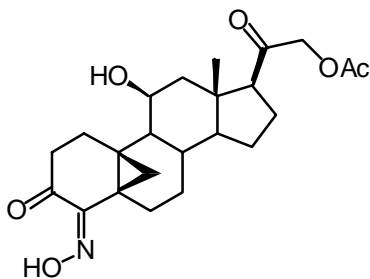
2. Draw and explain the product of the following reaction.



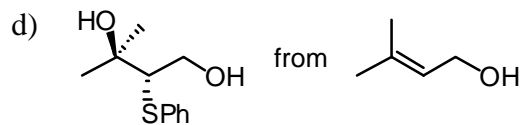
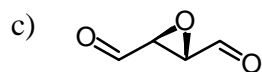
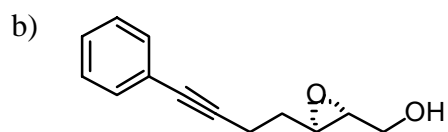
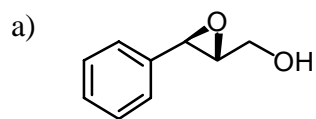
3. Explain the following experimental results. Draw starting materials and relevant intermediates in 3D. Clearly explain the mechanism.



4. In the legendary Barton synthesis of aldosterone side product **B** was observed. Explain. (Look at the lecture notes)



5. Synthesize the following target structures in optically pure form.



6. Show products of the following reactions. Indicate relative amounts of the products, where mixtures of products are anticipated. Indicate stereochemistry.

