

UNIVERSITY OF OSLO

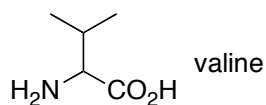
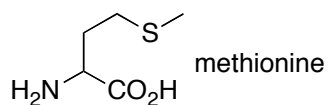
Faculty of Mathematics and Natural Sciences

Exam in KJM3200/4200
Day of exam: June 13, 2007
Exam hours: 14.30-17.30
This examination paper consists of 2 pages.
Appendices: None
Permitted materials: Pocket calculator and molecular building system

Make sure that your copy of this examination paper is complete before answering.

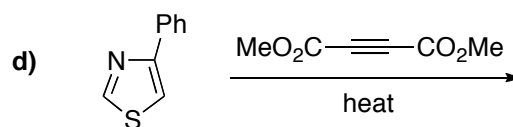
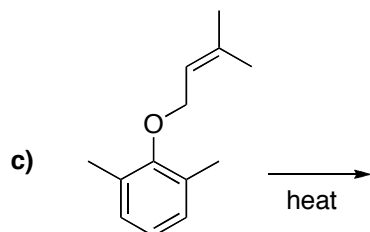
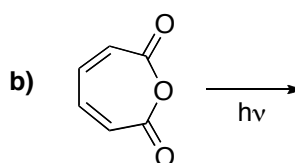
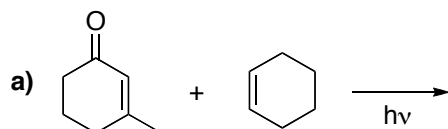
Exercise 1 (20 points)

Show how you would synthesize Val-Met from valine and methionine. Show structures of all reagents and intermediates. Detailed mechanisms are not required. Draw also the structure of Met-Val.



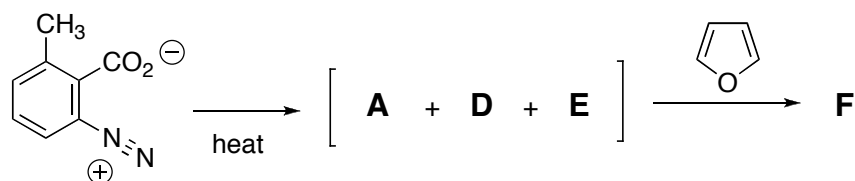
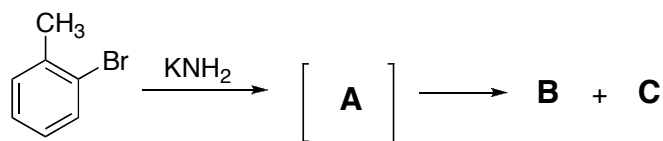
Exercise 2 (20 points)

Show, with mechanisms, which products are formed in the following reactions.



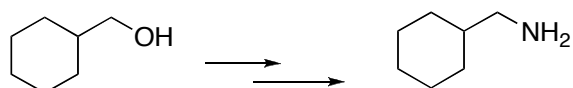
Exercise 3 (20 points)

Identify **A** – **F** and show, with mechanisms, how they are formed.



Exercise 4 (20 points)

Suggest two different good methods for the following transformation (there are more than two solutions). Show reagents used and intermediates formed. Mechanisms are not required.



Exercise 5 (20 points)

Which of the nucleosides **A** – **E**, if any, are

- identical?
- enantiomers?
- anomers?
- epimers?
- meso forms?

