

WORKSHOP 28

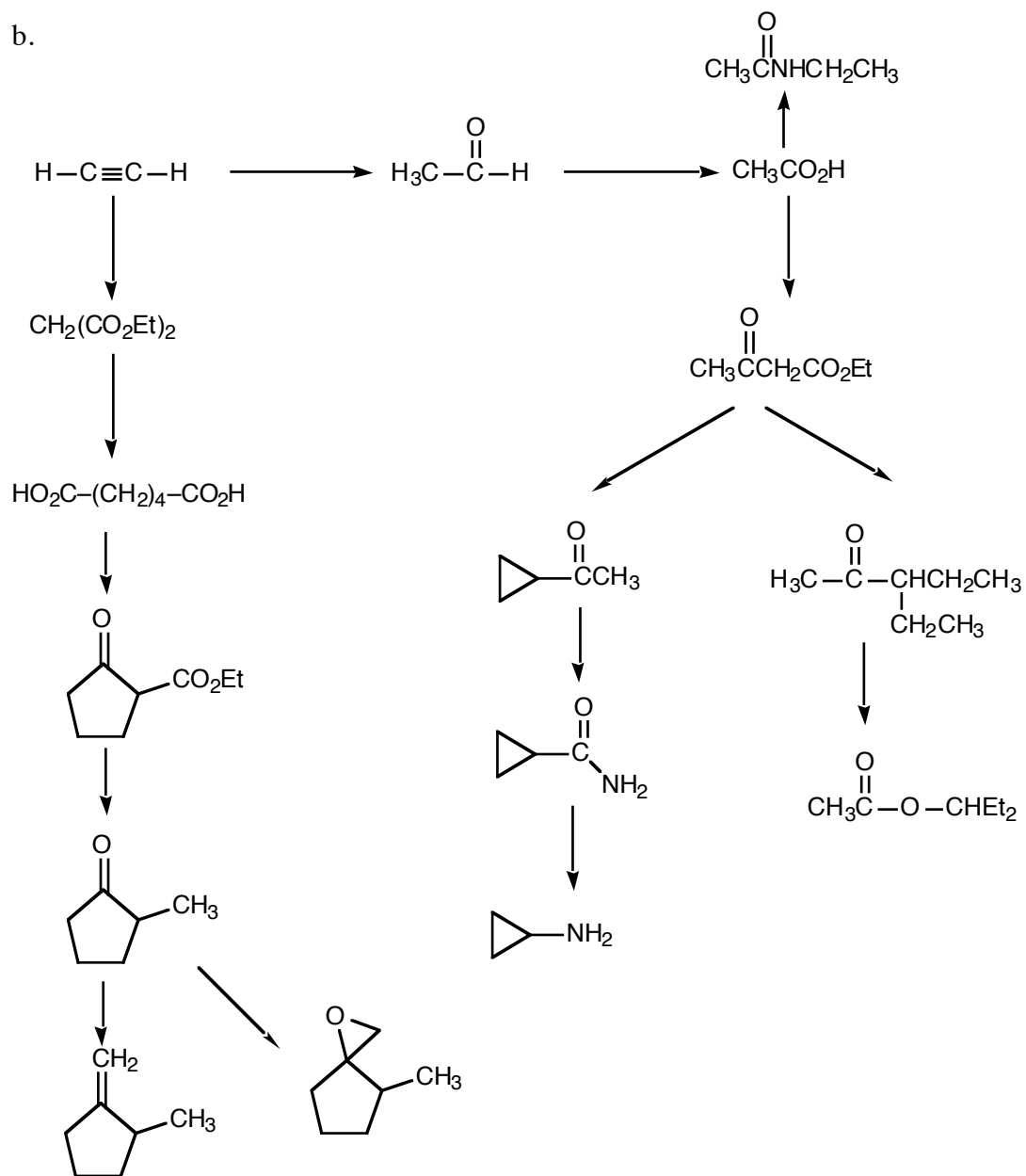
Nucleic Acids / Exam Review

1. The informational strand of a DNA contains the base sequence shown below (written in the standard 5' to 3' direction).

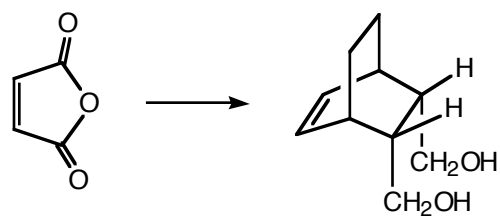
CGTTACCTACAAGCCTGT

- a) Indicate the base sequence that would match this in the DNA complementary strand.
- b) Indicate the base sequence in the m-RNA that would be transcribed.
- c) When the message is translated into peptide synthesis, describe each of the tRNAs that would be called for, in terms of their anticodons and the aminoacids they would bring in.
- d) There are 6 C bases in the original DNA sequence written above. Number them 1 to 6.
A mutation of C to T might cause no change, a minor change, or a drastic change.
For the six cases of C, categorize the change that would result if one C were changed to a T.

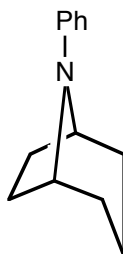
b.



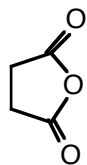
c.



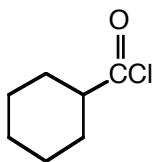
3. Treatment of the compound shown below with iodomethane led to the formation of two isomeric products, **A** and **B**. When each of these was treated first with $\text{Ag}_2\text{O}/\text{H}_2\text{O}$ followed by heating, there was formed the same mixture of compounds **C** and **D**. Compound **C** could be resolved into enantiomers but **D** could not.



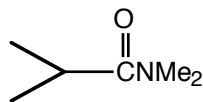
- a. Provide structures for **A** and **B** and indicate the structural relationship between them.
- b. Provide structures for **C** and **D**.
4. Arrange the following molecules in order of *decreasing* rate of reactivity toward excess aqueous 0.1 N NaOH solution.



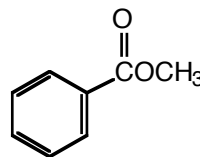
E



F



G



H