DNA-Proteins
Exercises

1. The *template* strand of a sample of double-helical DNA contains the sequence:
   (5’) TTACGAGATCAT (3’)
   a) What is the corresponding mRNA sequence?

   5’ AUG AUC UCG UAA 3’

   b) What is the resulting amino acid sequence?

   Met Ile Ser

2. A specific codon for Ser can be converted to Trp by a single nucleotide substitution. What is this codon for Ser?

   UCG

3. A specific codon for Leu can be converted to either Ser, Val, or Met by a single nucleotide substitution. What is this codon for Leu?

   UUG

4. The figure below shows a non-standard nucleotide base pair; identify it (note that dX indicates a deoxyribonucleotide, as contained in a DNA molecule, while rX refers to a ribonucleotide, as found in an RNA molecule).

   ![Nucleotide base pair diagram]

   A) dA – dC
   B) rA – rC
   C) rA – dT
   D) rA – dC

5. Consider the following RNA structure:

   Write its parenthesis diagram:
CCGC
CCCUUUUCCGAGGGUCAUCGGAACCA

CCGCC
CCCUUUUCCGAGGGUCAUCGGAACCA

3'