Discussion Group #1: Quiz

1. (1 point) Write out the complementary chain to the following piece of nucleic acid. Make sure you make clear which are the 5' and 3' ends in your answer.

\[ \text{5'...GCAGTGACTG...3'} \]
\[ \text{3'...CGTCACTGAC...5'} \]

2. i) (0.5 point) Chargaff’s rule states which of the following concentration equalities? (Circle the correct answer(s); there may be more than one correct answer)

- \[ T = G \]
- \[ G = C \]
- \[ T = A \]
- \[ A = G \]
- \[ G = U \]

ii) (0.5 point) Chargaff’s rules apply to which of the following situations? (Circle the correct answer(s), there may be more than one correct answer)

- RNA
- single-stranded DNA
- double-stranded DNA
- all of the above

3. (2 points total) Circle the ONE correct answer in the four questions below:

i) Which base has an amino (-NH₂) group attached at C-2?  A \[ \text{C} \]  G  \[ \text{F} \]  T  U

ii) Which base has a methyl (-CH₃) group attached at C-5?  A  C  \[ \text{G} \]  T  U

iii) Which class of base is linked to the sugar through N-1?  Purine  Pyrimidine

iv) How many phosphodiester linkages in a piece of RNA 6 units long?  4 \[ \text{5} \]  6  7

4. (1 pt total) Circle the ONE correct answer for each statement:

i) A single base/sugar/phosphate combination is called a:

- Nucleoside  \[ \text{Nucleotide} \]  Nucleic acid

ii) Nucleic acids are synthesized by:

- Nucleases  \[ \text{Polymerases} \]  Replicases  Synthetases