

02-711: Computational Molecular Biology and Genomics

Quiz # 5

February 18, 2009

Name:

You have 15 minutes to complete the quiz. The quiz is closed book. You may use a calculator to do numerical computations. If there are any questions, clarifications, or errors, feel free to talk to the instructor or TA. Please make sure you write your name on the quiz.

1 Hardy-Weinberg Equilibrium

In a hypothetical population of n individuals under the Hardy-Weinberg equilibrium (HWE) with tri-alleles A_1 , A_2 , and A_3 , it was found that allele counts for A_1 , A_2 , and A_3 are n_{A_1} , n_{A_2} and n_{A_3} . Let p_{A_1} , p_{A_2} , and p_{A_3} be the corresponding allele frequencies.

- (a) Write out the allele frequencies for each allele.

$$p_{A_1} =$$

$$p_{A_2} =$$

$$p_{A_3} =$$

- (b) List all possible genotypes.

- (c) Compute the expected frequencies for each genotype.