Exam 2 2014 Review , EVOLUTION 370 PROFESSOR CHARLES FENSTER

Drift:

Explain Fst

Why does low migration result in drift

why does drift lead to loss of heterozygosity

how do you distinguish from selection (McDonald K, NS vs S, etc.) dn vs ds etc.

What is codon bias and why is it associated with the abundance of t-RNA

Whalund effect

Silene dioica example, why does migration lead to homogenization, and why is there greater genetic differentiation among young populations vs. intermediate age populations.

Why do smaller populations respond to selection differently than larger populations

Ne and drift

Why bottlenecks lead to inbreeding depression

what is heterosis

what is inbreeding depression

Review PEDIGREES

Review effective population size

Explain enantiostyly

Sex

what is “r”, that is recombination rate

Adv and Disadv

Moran’s study

Mueller’s Ratchet

What is LD and why does it decay with recombination

you could talk about what happens to the Y chromosome without recombination.

QG

Long flower example by EAST (Nicotiana)

Marker based approaches and QTL, but keep this intuitive

h2 and how it is estimated

Selection Differential (S),

contrast Orr with Fisher optimum, go over diagram

what is neodarwinian synthesis

Explain blending inheritance, continuous variation, etc.

Form and Function

Go over phylogenetic contrasts

Beetle-PLANT example

Sex Selen. What is asymmetric limits