

QTL

Pre- and Post-Test

The following demographic questions are for evaluative purposes and will be kept confidential.

(1) I am a UCLA student:

- a. yes
- b. no

Non-UCLA Student Institution Name:

(2) Email Address _____

(This will be used for tracking purposes only. We will keep your email address confidential, we will not share it with anyone.)

(3) Academic year:

- a. Freshman
- b. Sophomore
- c. Junior
- d. Senior
- e. Other

(4) Department/major in which this course was offered:

- a. Psychology
- b. Biology
- c. Neuroscience
- d. Other

(5) Department/major to which I belong:

(6) Grade expected to receive in this course:

- a. A
- b. B
- c. C
- d. D
- e. F

(7) Gender

- a. Male
- b. Female

(8) I would characterize myself as:

- a. Asian
- b. Black
- c. Latino(a)
- d. Native American
- e. White
- f. Other

The following questions are based on the information taught in the QTL module itself.

(9) QTL stands for:

- a. Quantitative T-test Loci
- b. Quantitative Trait Loci
- c. Quasi Theoretical Loci
- d. Quasi Trait Localization
- e. Quasi Trait Loci

(10) QTL analysis is good for:

- a. finding a single gene that codes for a qualitative trait.
- b. finding a single snp that codes for a specific trait.
- c. relating a qualitative phenotype determined by multiple genes to those specific genes.
- d. relating a phenotype determined by multiple genes to regions of DNA that are related to the phenotype.
- e. both a and b.

(11) Recombinant inbred strains of mice:

- a. are the same as "knockout" mice.
- b. have been manipulated as embryos by inserting foreign genes.
- c. have a unique mix of DNA from the F_0 strains.
- d. are completely heterozygous for all alleles.
- e. both b & d.

(12) Extraneous variables may be controlled for by:

- a. statistical methods such as multiple regression.
- b. statistical methods such as t-tests and ANOVAs.
- c. design considerations ONLY.
- d. a-priori statistical methods.
- e. cannot be controlled for because they are always present.

(13) A residual in regression:

- a. is the variance that is not predicted by the X variable.
- b. is the square of the correlation.
- c. is the variance that is predicted by the X variable.
- d. is the same as the mean square between.
- e. is the same as the correlation coefficient.

(14) Linear regression:

- a. calculates a line that minimizes the squared deviations in the X variable.
- b. calculates a line that minimizes the squared deviations in the Y variable.

- c. calculates a line that minimizes the squared deviations in the X and Y variables.
- d. calculates a line that predicts the Y variable but is never a better predictor than the mean of Y variable.
- e. is the same as correlation.

(15) Gene chips:

- a. allow an “in silico” PCR.
- b. allow one to determine all alleles in the genome.
- c. allow one to determine if a given allele is expressed as mRNA.
- d. allow one to determine if a given allele is expressed as a cDNA.
- e. all of the above

(16) The Likelihood Ratio Statistic:

- a. is low when the phenotype is discrepant between individuals with different markers at all loci.
- b. is low when the phenotype is discrepant between individuals with the same marker at all loci.
- c. is low when the phenotype is not discrepant between individuals with different markers at the same locus.
- d. is high when the phenotype is discrepant between individuals with different markers at all loci.
- e. is high when the phenotype is not discrepant between individuals with different markers at all loci.

(17) Polymorphic in genetics is defined as:

- a. having multiple alleles usually with multiple phenotypes.
- b. having multiple forms all arising from the same allele.
- c. having one form associated with one allele.
- d. having multiple alleles contributing to one phenotype.
- e. having a frequency distribution of the trait that is normal.

(18) Which of the following is true of quantitative traits?

- a. They appear to vary quantitatively and continuously, e.g. height.
- b. They must be measured, and can't be classified by appearance, like eye color.
- c. They can be studied by counting.
- d. They are controlled at two or more gene loci.
- e. All of the above statements ARE true of quantitative traits—none are not true.

(19) Dr. Spearman is interested in determining if there is a genetic basis of IQ. She takes very high IQ individuals and studies their genotype. She finds no consistent allelic variation among these individuals. Which conclusion should she draw?

- a. IQ is largely determined by environment.
- b. IQ does not vary as a function of genotype.
- c. Genotype does not vary as a function of IQ.
- d. Genes do not influence IQ.
- e. None of the above.

(20) How many weeks has it been since you completed the Bioinformatics module (if you are taking the pretest before the module write pre)? _____

QTL

Student Materials Evaluation

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- i. Senior
- j. Other

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- f. Biology
- g. Neuroscience
- h. Other

(4) Department/major to which I belong:

(5) Grade expected to receive in this course:

- f. A
- g. B
- h. C
- i. D
- j. F

(6) Gender

- c. Male
- d. Female

(7) I would characterize myself as:

- g. Asian
- h. Black
- i. Latino(a)
- j. Native American
- k. White
- l. Other

The following questions are based on your opinion of the learning materials used in the QTL module.

(8) The student lab manual was clear and easy to follow.

(a) strongly agree (b) agree (c) neither (d) disagree (e) strongly disagree

(9) Overall, the purpose of the computer tasks was clear and easy to follow.

(a) strongly agree (b) agree (c) neither (d) disagree (e) strongly disagree

(10) Understanding the bioinformatics tools used in the QTL module is important.

(a) strongly agree (b) agree (c) neither (d) disagree (e) strongly disagree

(11) My understanding of bioinformatics databases was enhanced by actually doing the computer tasks and examining their data.

(a) strongly agree (b) agree (c) neither (d) disagree (e) strongly disagree

(12) My understanding of genetics was enhanced by the QTL module.

(a) strongly agree (b) agree (c) neither (d) disagree (e) strongly disagree

(13) My understanding of statistics was enhanced by the QTL module.

(a) strongly agree (b) agree (c) neither (d) disagree (e) strongly disagree

(14) I learned something about neuroanatomy and histology from the QTL module.

(a) strongly agree (b) agree (c) neither (d) disagree (e) strongly disagree

(15) I learned something about molecular biology from the QTL module.

(a) strongly agree (b) agree (c) neither (d) disagree (e) strongly disagree

(16) I felt relaxed about the performing the computer tasks because I knew that it was okay to make mistakes.

(a) strongly agree (b) agree (c) neither (d) disagree (e) strongly disagree

(17) Please describe the purpose of the QTL module from a learning standpoint in the space provided below.

