

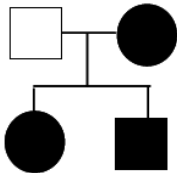
Test Unit 3: Heredity

1) **Make a conceptual map** with the following terms. (1 point).

allele, dominant, gene, chromosome, genotype, heterozygote, gamete, recessive, phenotype, character, homozygote

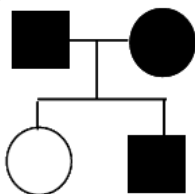
2) From the following pedigrees, **establish if the data are consistent** with Autosomic Recessive model (AR), Autosomic Dominant model (AD) or Sex Linked Recessive model (SLR). Write the genotype of each individual for each case (redraw the pedigree three times). If the data are not consistent, mark with a circle the individual/s whose genetic configuration makes the model not consistent. (2 points).

a)



AR?
AD?
SLR?

b)



AR?
AD?
SLR?

3) If black fur colour is controlled by dominant allele (B) and brown by its recessive allele (b), give the genotypes of the parents and offspring of a cross of black, male with a brown female that produces 6 black and 6 brown F1. (2 points)

4) A brown-eyed man with a blue-eyed mother marries a brown-eyed woman with a blue-eyed father. The allele for brown eyes (B) is dominant over the allele for blue eyes (b). What is the probability that their first child will be brown-eyed? Describe the Law of Mendel that predicts this result? (1 points)

5) A boy, whose parents and grandparents had normal vision, is colour-blind. What are the genotypes for his mother and his maternal grandparents. Use X^B for the dominant normal condition and X^b for the recessive colour-blind phenotype. Assume a Sex-Linked Recessive model of heredity for colour-blindness. (1 points)

6) Five genes G, H, I, J, K belongs to a new species. Your work is to map them by auto-crossing double heterozygotes. Here you have the result for all the possible double heterozygote crosses. Draw a chromosome map of these genes, establish the minimal number of chromosomes and explain briefly the Law of Mendel you are using to do so.

	H	I	J	K
G	625HG: 125hG: 125Hg: 62hg	562GI: 187gl: 187Gi: 62gi	562GJ: 187gJ: 187Gj: 62gj	562KG: 187kG: 187Kg: 62kg
H	x	562HI: 187hl: 187Hi: 62hi	562HJ: 187hJ: 187Hj: 62hj	562HK: 187hK: 187Hk: 62hk
I		x	562JI: 187jI: 187Ji: 62ji	625KI: 125Ki: 125ki: 62ki
J			x	562KJ: 187Kj: 187kJ: 62kj
K				x

For your correction:

	1	2	3	4	5	6	
Didn't read carefully the exercise							Underline the important words; make a circle around the products you are asked for.
Difficulties remembering names or terms							Maybe lack of study. Using nemotechnic rules could help you. Try to use drawing or images to collect information when you study.
Didn't really understood some of the processes we have worked on in the classroom							Participate more in the classes, and analyze all the exercises we have done before the exam.
I know the terms and understand the processes, but have had problems to express my answer.							Stop working on the question, and get back after some minutes. Use other formats to explain: drawings, schemes, conceptual maps,...
Silly errors, I did really know the answer, but made a mistake							CONCENTRATION! If you need it, make some pauses during the exam.
Didn't have time enough							Organize yourself during the test. Keep a clock visible during the test, order the questions from fast-solution questions to slow-solution-questions and program the time you'll use for every question.
Others (specify)							

--	--	--	--	--	--	--	--	--

